

DOCUMENT RESUME

ED 153 494

FI 009 422

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TITLE Reports on Text Linguistics: Approaches to Word Order.
INSTITUTION Abo Akademi (Finland).
PUB DATE 76
NOTE 252p.
EDRS PRICE MF-\$0.83 HC-\$14.05 Plus Postage.
DESCRIPTORS Adverbs; Connected Discourse; *Discourse Analysis; English; Grammar; Language Research; Phrase Structure; Semantics; *Sentence Structure; *Structural Analysis; Suprasegmentals; Swedish; *Symposia; *Syntax; Written Language
IDENTIFIERS *Text Linguistics

ABSTRACT

This volume contains papers presented in connection with a symposium held in 1975 and sponsored by Abo Akademi, for the purpose of discussing ongoing research in word-order studies. Papers include: (1) a prolegomena by N.E. Enkvist; (2) "On the Ordering of Sister Constituents in Swedish," by E. Andersson; (3) "What is New Information?" by O. Dahl; (4) "Notes on Valency, Semantic Scope, and Thematic Perspective as Parameters of Adverbial Placement in English," by N.E. Enkvist; (5) "On Certain Conflicts between Focus-Determined and Clause-Type-Determined Word Order," by T. Fretheim; (6) "Problems of Basic Word Order," by O. Heinamaki; (7) "Parameters Affecting the Position of Certain English Adjuncts," by M. Hicks; (8) "Some Thoughts on Variable Word Order," by E. Holman; (9) "Problem of Interaction Bias in Word Order Probability Estimation," by S. Jacobson; (10) "Some Remarks on Topic-Comment and Presuppositions," by P. Kiefer; (11) "Note on Factors Affecting the Position of Accusative Objects and Complements in Aelfric's 'Catholic Homilies I'," by V. Kohonen; (12) "Presupposition, Assertion, and Discourse Structure," by C-G. Sandulescu; (13) "Adverbial Positions in French, Contrasted with Those in Swedish: Stress, Focus and Subjectivity," by S. Schlyter; and (14) "Converse Terms in Swedish," by B. Sigurd. (AM)

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APPROACHES TO WORD ORDER**
Edited by Nils Erik Enkvist and Viljo Kohonen

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P R E F A C E

The Text Linguistics Research Group, sponsored by the Academy of Finland with offices at Abo Akademi (The Swedish University of Abo, Finland), has had as part of its programme a series of seminars ranging from informal and even improvised sessions to prepared symposiums. Scholars from outside the Group have often been invited to take part in these discussions.

In the spring of 1975, the Group sent the "Prolegomena" (reprinted in this volume) to some linguists in Finland, Norway and Sweden who were known to take an active interest in word-order studies. The response exceeded all expectations and the symposium attracted some forty participants. For three days, on November 28-30, 1975, word-order problems were intensively discussed at Abo. It was felt that the papers should be made available to a wider circle of readers. The present volume is the outcome of this decision. We are grateful to the Academy of Finland for a publication grant, as well as to the Research Institute of the Abo Akademi Foundation for including this volume in its series.

All papers except those by Eugene Holman and Bengt Sigurd were read and discussed at the symposium. Most of the papers are reproduced in the form submitted by the contributors, with no, or a minimum of, editing; several have been photographed for offset directly from the authors' own typescripts. This explains the variety of styles, as well as the use of terms such as theme, rheme, topic, comment, and focus in different senses in different papers.

Two of the papers presented at the symposium are being published elsewhere. Auli Hakulinen's "Functions of Word Order in Finnish" has appeared in an expanded Finnish-language version, with an English summary, in *Suomen kielen generatiivista lauseoppia 2* (Publications of the Research Institute of the Abo Akademi Foundation, number 7, 1976). Gunnel Källgren's "Topicalization and Clefting as a Result of Constituent Modification" will appear as part of a longer article in

Studia Linguistica. Two further papers, by Kim Nilsson and Ake Viberg, were read but not submitted for the present volume; they too will presumably appear elsewhere in due course.

Of the two editors, Nils Erik Enkvist co-ordinated the preparations for the symposium, whereas Viljo Kohonen has been in charge of the technical production of this volume. We are grateful to Erik Andersson, Fred Karlsson and Auli Hakulinen for much assistance; to Marianne von Wright for efficient administration of the symposium and for carrying the burden of the editorial chores; and to Aini Roine for re-typing some of the papers with her customary care.

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February, 1976

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PROLEGOMENA TO A SYMPOSIUM ON
"THE INTERACTION OF PARAMETERS AFFECTING WORD ORDER"¹

1. The basic tenet underlying the choice of topic for this symposium is: Syntax is hierarchic, but linguistic structures must be expressed through ordered linear chains (strings) of spoken or written symbols. In the words of Lucien Tesnière: "Toute la syntaxe structurale repose sur les rapports qui existent entre l'ordre structural et l'ordre linéaire."²

Complete models of a natural language must be concerned with the mapping of semantically explicable hierarchic structures, with due attention to dependencies and primacies, into strings when explaining the generation of texts, and with the mapping of strings into semantically explicable hierarchies, including dependencies and primacies, with the aid of cues when explaining the analysis of texts.

2. Different linguistic models and approaches differ in their mechanisms of mapping hierarchies into strings or vice versa.

In analytic, taxonomic grammar, the investigators' main concern has often been the description and classification of patterns, sometimes without a stringent correlation of the order of elements with specific meanings.

In earlier modern generative grammars, a definite linear or-

¹ With thanks to the members of the Text Linguistics Research Group of the Academy of Finland (Erik Andersson, Auli Hakulinen, Fred Karlsson, Viljo Kohonen) for comments and criticism.

² Éléments de syntaxe structurale (Paris: Klincksieck, 1959), p. 19.

dering of elements emerges from the rules. In terms of a given rule system this order may be 'secondary' in the sense that it is one of the results of rules which have functions other than mere linear ordering. For instance, many rules which introduce constituents into the sentence place them directly into their ultimate surface position, and certain rules indicating major functional categories of sentence structure are triggered by formatives such as *Q*, question, which prompt certain rearrangements of constituent order. Though making the rules produce desirable word-order patterns of course is one of the considerations that enter into syntactic rule-writing, there has arisen a need for sets of further rules -- 'movement transformations' -- expressly designed to produce such word-order patterns as are not otherwise adequately catered for by rules which have other functions as well. But the borderline between these 'movement transformations proper', which expressly handle problems of linearization, and those phrase-structure rules or transformations which produce linearizations as only one of their operations, varies with the model.³ In principle, every time we formulate a rule we should also be able to state what triggers it off (or what is its function). In this light, the failure of some advocates of movement transformations to specify such triggers is perhaps a technical shortcoming to be remedied with time. For instance, 'topicalization' could be cited as an example of a movement transformation which has often been discussed without adequate clarification of its motives.

3. In the study of linearity in language, it has been expedient to distinguish a number of levels for analysis and description.

In phonology, one classic operation is the segmentation of the acoustic continuum into a sequence of discrete, linearly ordered units such as phonemes. It is well known that a given acoustic segment, for instance the transitional phase of a vowel-type sound, may contain cues not only for the identification of the vowel itself but also for the identification of a neighbouring consonant. Phonemic segmentation involves special

3 On different possibilities of modelling word order in generative grammar, see Zemon Bach, "Order in Base Structure" in Charles N. Li, ed., *Word Order and Word Order Change* (Austin & London: University of Texas Press, 1975), pp. 307-345.

problems of cue overlap. 'Phonotactics', 'graphotactics' and 'morphotactics' have been used as terms for the study of the ordering and combination of phonological, graphemic, and morphological units, respectively. In the study of word formation and compounding, a special area of the ordering of lexical elements comes to the fore. In word-order studies, linguists have actually investigated not only the ordering of words but also of phrases and clauses, though apparently without feeling any urgent need for terms such as 'lexotactics', 'phrasotactics' and 'clausotactics'.

In fact, a strict compartmentalization of such levels would bring with it certain hazards. To begin with, experience, common sense and a wealth of psycholinguistic data show that in the identification of phonemes and words, cues from levels other than phonotactics or lexis may play a crucial role. Lexical, semantic and situational cues drastically improve the perception of linguistic stimuli presented aurally through noise or distortion, or visually by short tachistoscopic exposure. Similarly, various kinds of context help subjects to fill in the missing items in cloze-type experiments or tests. In normal linguistic communication we do not perceive signals in isolation or merely against the background of a homogeneous environment definable at the signals' own level of structure. Thus phonemes are not perceived merely as part of a phonotactic system. On the contrary we bring in all levels of phonology (including suprasegmental features), syntax, semantics and context at once to aid us in perception and comprehension, making use of the redundancies and compensatory mechanisms characteristic of natural languages. We carry with us complex networks of expectations based on previous experience, and we make optimal use of them when interpreting linguistic strings that we hear or see. In the disambiguation of syntactic and lexical structures, context and situation also play a crucial role. This data from various levels interact in the perception and interpretation of language, and such interaction may also be relevant to the study of permissible ranges of word-order patterns.

It is at the same time becoming increasingly clear that many of the forces affecting word order in a clause and a sentence do not reside within that clause or sentence. In fact some of the parameters affecting word order must ultimately be sought outside the affected clause or sentence, in the textual and situational context, in the universe of discourse, in

the culture and knowledge shared by the communicants, in the strategies adopted by a speaker or writer, and in other domains outside the sentence itself.

Matters of word order as well as the ordering of sentences and suprasentential units into larger entities have long been a concern for rhetoricians, teachers of composition and literary critics. In linguistics, the ordering of sentences in discourses and texts has traditionally received comparatively little attention. Recently, however, these problems have become an important object of study for text linguists and discourse analysts, and for scholars working on the extraction of cues for the determination of syntactic hierarchies and dependencies out of linguistic strings. Studies of the interaction of such cues from different levels are being carried out for instance by those interested in automatic parsing by computer, in machine translation, information retrieval and artificial intelligence.

4. Not only is it interesting to see how different linguistic mechanisms from different levels interact in performing a given function in language. It is also relevant to see how a given linguistic mechanism such as word order contributes to the expression of different linguistic functions.

It is well known that word order is one of the important devices providing cues for the basic interpretation of syntactic structures. Word order is used to distinguish between the canonical forms of major modes such as statement, question and command. Word order can contribute to marking the differences between clause types such as main clause and subordinate clause, and thus clarify syntactic relations within a complex sentence. Word order may distinguish between different functions of constituents within the clause and sentence; so that for instance in English, a noun phrase preceding a transitive verb is usually interpreted as a subject, a noun phrase following a transitive verb as an object. Yet another function signalled by word order is what linguists have begun to call 'scope' with a term borrowed from logic. 'Scope', that is the span covered by elements such as quantifiers, negators, adverbials and modifiers, is often signalled by linear position in the clause or sentence.

In serving such functions, however, word order interacts with other kinds of cues and signals. In many languages, functional relations within a clause or sentence are marked by case endings, perhaps independently of the place of the constituent in the string. Congruence, which involves relations between formal markings of words or constituents in a string, may operate to some extent independently of word order as such, as every student of Latin well knows. Still, the distance between constituents and the order of constituents may affect interpretation of congruence: if a clause or sentence contains several phrases in the same inflectional form, criteria of word order and distance may affect decisions as to what words are understood as part of the same phrase. Thus word order may interact with formal markings through congruence.

Semantic selection is another cue type which may overrule interpretations based on word order. In the Swedish sentence

Osten åt rätten i går.

(normally pronounced with focus on OSTEN), selection rules suggest the interpretation of osten as object in spite of its position in front of a transitive verb. Such examples suggest that in the determination of syntactic functions of constituents, cue types may form hierarchies. Selection rules may thus in some instances overrule interpretations based on word order, but presumably not interpretations based on morphological markings of syntactic functions. The question as to how different sub-systems of cues are hierarchized, used and balanced against one another is solved differently in different languages and language types. As a general principle it might be assumed that languages making more use of formal markings and congruence are freer to use word order for tasks other than the expression of basic syntactic functions such as the syntactic roles of constituents within the clause or sentence.⁴ But these 'other tasks' ought to be specified rather than loosely dismissed as instances of free variation, vague 'stylistic effects' or the like.

⁴ It might be noted in passing that even Finnish with its rich morphology falls back on word order for the interpretation of sentences such as *Tytöt kutsuivat pojat kahville.*, where there are no formal distinctions between the nominative and the accusative.

5. At least some of these 'other tasks' have received a great deal of attention in recent linguistics. As scholars of the Prague school and many others have emphasized, word order is also used to signal the arrangement of information within the clause or sentence ('functional sentence perspective', thematic ordering in terms of theme and rheme or topic and comment, and focus). But here too word order may interact with other devices: there are languages marking thematic relations by morphological markers such as articles, by special particles, deictic pointers, and suprasegmental features.

More recently, thematic ordering has been increasingly understood to be at least partly subservient to the arrangement of information not only within the clause and sentence but also within the text.⁵ Thematic ordering is one aspect of text strategy, which is the overall policy chosen by the encoder to express a certain body of information. Here the difference between information known to the encoder and decoder, information previously given in the text, and new information is an important parameter, which interacts with the strategic principles governing the organisation of discourse and text. A stringent definition of 'theme', 'rheme' and 'focus' is a prerequisite for investigations of these matters. One avenue worth exploring would be to define 'theme' and 'rheme' in positional terms (thematic elements come early, rhematic ones late in the sentence), and to define 'focus' in terms of prominence or foregrounding. In this sense, unfocalized thematic arrangements seem to correlate with existential presuppositions and focalized arrangements with non-existential presuppositions. Thus the sentence

John ate the sandwich.

when pronounced without marked focus seems to presuppose merely that John and the sandwich exist, whereas

THE SANDWICH John ATE.

(as a main clause, not a relative) presupposes not only existence but a

⁵ Such views were in fact expressed by Henri Weil in 1844 under the influence of Beauzée and Gamaches; they have become increasingly topical with the rise of discourse analysis and text linguistics.

proposition, for instance in the context 'THE SANDWICH John ATE, but the porridge he only looked at.' Some word-order patterns seem thus to be focally marked, insofar as they strike us as natural only when pronounced with phonological markings of focus (stress, intonation, paralinguistic devices) traditionally labelled as 'emphasis'. Cleft constructions of different kinds would also be focally marked, because they are based on propositional rather than on existential presuppositions. Especially in the study of spoken language, word order and the stress-and-intonation complex that manifests focus are in a close relationship.

6. In addition to thematic ordering and focus, grammarians have often spoken about a 'Gesetz der wachsenden Glieder'⁶ or 'principle of end-weight' to suggest that there is a tendency to place weighty constituents in final position. One of the problems connected with end-weight is to what extent this principle needs to be a separate parameter or is redundant, given the tendency for weighty elements to contain new information, and thus be explained in terms of functional sentence perspective.

7. A further principle affecting word order is 'iconic cohesion', that is, the repetition of patterns which leads to isomorphism between different constituents of a clause or sentence, or between different units of a text (clauses, sentences, paragraphs, etc.; in poetry, lines, stanzas etc.). As a stylistic device, iconic cohesion is particularly common in artistic (for instance 'balanced') prose and in poetry. In metrically regular poetry for instance, the needs of phonological iconicism (metre, alliteration, rhyme, cadence) often interact with word order and lead to the use of 'poetic' word-order patterns not commonly used in other kinds of communication.

8. In the light of such considerations, word order appears to be affected by a number of different parameters:⁷

6 Otto Behaghel in *Indogermanische Forschungen* 25 (1909): 110-142.

7 This list can be compared with that of Otto Jespersen in *Modern English Grammar* VII: 54ff (Copenhagen, 1949), where the 'principles' are: actuality, precedence of modifier, cohesion, weight, stress and rhythm, the hearer's point of view, and tradition.

- expression of modalities (statement, question etc.)
- difference between clause types (main clause, subordinate clause)
- expression of basic syntactic functions such as subject, object, etc., and of the scope of operators and modifiers
- expression of thematic ordering (functional sentence perspective) determined by text strategy in terms of parameters such as given and new
- expression of focus, motivated by propositional pre-suppositions; this is linked with emphasis and special structures such as cleft
- weight of constituents (the principle of end-weight), and
- expression of iconic cohesion.

9. If it is possible to isolate such or similar groups of parameters affecting word order, it becomes important to find out how these parameters interact. It would in other words be interesting to review a number of instances in which effects of the different parameters can be distinguished from each other, and in which some of the parameters constrain the workings of others. This interaction is to a certain extent language-specific, but it should ultimately be related to language structure in toto and expanded in the direction of linguistic typology. Another central problem is the relation of these parameters to other areas of grammatical structure. It might for instance be hypothesized that a language rich in inflections is freer to use word order for purposes other than the expression of basic syntactic functions, and that a language using articles to mark differences between given/known and new elements is freer to use word order for purposes other than the expression of 'nominative species', that is, the distinction between given and new which affects thematic arrangement. It would be interesting to discuss instances where factors such as those listed under (8) in fact form a hierarchy in a language-specific, in a typological and also in a stylistic or sociolinguistic frame of reference. The hierarchic position of a parameter may depend on communicative function and style, for instance when metrical principles motivate otherwise unusual word-order patterns.

Those who view such problems in a diachronic perspective may wish to include considerations of changes in the structural roles of word order and, if need be, analyses of the influence of word-order patterns

of one language upon another. Of particular interest are developments such as that in English, where the disappearance of morphological markers shifted certain burdens from morphology to word order, whose function thus became different.

10. We have dwelt so long on these, perhaps needlessly elementary matters to explain how we in the Text Linguistics Research Group interpret the theme of our symposium, which has the tentative working label

THE INTERACTION OF PARAMETERS AFFECTING WORD ORDER.

To give the necessary coherence to the discussions, we expect all contributions to be closely related to this overall theme. Some contributions might criticize and modify the list of parameters suggested under (8). Others might start from a theoretical problem and discuss it in the light of concrete examples from different languages. Yet others might start from a specific problem and set of examples and try to arrive at models adequate for its analysis and explanation within some explicit theory. The topic, we feel, is wide enough to cater for a variety of interests; we hope that it is at the same time restrictive enough to provide a common basis for intensive discussion. As the word order of the individual clause and sentence is affected by the textual environment, we particularly welcome contributions which expressly reckon with intersentential parameters. And as any linguistic features are in principle capable of functioning as style markers, papers describing styles in terms of word-order patterns also fall within the scope of this discussion.

ON THE ORDERING OF SISTER CONSTITUENTS IN SWEDISH
- THE CHOICE BETWEEN PREPOSED AND POSTPOSED MODIFIERS

One of the basic tenets of modern linguistics is the assumption that linguistic messages, or texts, have an internal structure. A text can be analyzed in parts, which in their turn can be analyzed in parts, and so on. When a text is interpreted, one starts out from the smallest meaningful units, the morphemes, and calculates the meaning of the next higher constituent. Information on the kind of syntactic combination in a constituent can also be used in the calculation.

It is then assumed that there is a correspondence between the syntactic and the semantic structure of a sentence. But sometimes this resemblance seems to be disturbed. A predicative, for instance, syntactically modifies the predicate verb and can be placed in the same positions as normal adverbial modifiers to the verb:

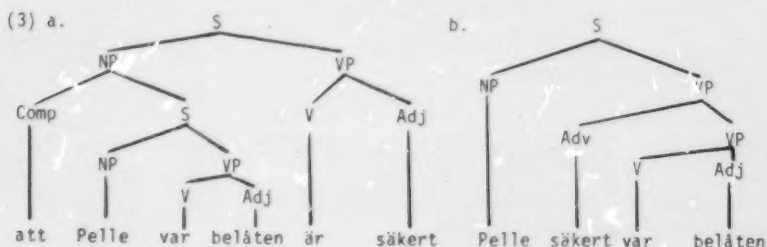
- (1) a. Pelle hade stigit upp kl. 7 frisk och utvilad.
b. Pelle hade frisk och utvilad stigit upp kl. 7.
c. Frisk och utvilad hade Pelle stigit upp kl. 7.

Semantically, however, the predicative "modifies" the subject, or sometimes even the object. In sentence (1), the property of being healthy and recreated is ascribed to Pelle. Similarly, a sentence adverbial is often placed within the verb phrase like other adverbials, and modifies just the verb phrase syntactically, although it semantically expresses something about the whole sentence:

- (2) Pelle var säkert belåten.

There is a possibility that many such disparities can be explained by transformations. We can postulate an underlying structure, where all constituents are combined with those sister constituents that they semantically "modify". The syntactic relations in this underlying structure will then mirror the semantic relations between the constituents.

This close correspondence between semantic and syntactic structure can be disturbed by transformations, so that a constituent syntactically modifies a different head at the surface level. Sentence (2) could be derived from (3 a), (3 b) being an intermediate stage:



We can then distinguish between modifier-head relations at different stages in the derivation. At a very early stage in the derivation, the syntactic relations will mirror the semantic ones, but at the surface level, the syntactic relations might be different. I shall here be concerned only with relationships at the surface level or at a level very close to the surface. It is of course hard to say what constitutes such a surface modifier-head relationship, partly because such a relationship can sometimes be confused with an underlying, semantic one. But at least grammarians seem to have some kind of intuition on the matter. It is quite likely that even the ordinary speaker makes use of similar intuitions when organizing and interpreting sentences. Only by perceiving the surface structure can he reconstruct the underlying meaning of the sentence.

It can also be pointed out that the terms modifier and head intuitively seem to be applicable only to constituents within the same sentence. This is in fact one of the main reasons for distinguishing the sentence as an important textual unit. The combination of phrases into sentences might be basically different from the combination of sentences into a text, which is important for researchers in text linguistics to note.

So far, we have viewed the modifier-head relation as a certain relation between sister constituents in a tree diagram of a sentence. But it is not always the case that intuitively defined modifiers and heads occur next to each other on the surface. There is also the

possibility of discontinuous constituents. A modifier can be placed inside its own head, or separated from it by other elements. Modern grammarians have used transformations to solve this problem, too. We can assume that all heads and modifiers do occur next to each other at an underlying level, but that they can be shifted around by special transformations that do not change our intuitions on the modifier-head relationships in the sentence. Examples of such fairly transparent movement rules in Swedish are "fundamentation" (which corresponds to topicalization, adverb preposing and Y-movement), question word and relative pronoun preposing (WH-movement), subject-verb inversion, extraposition of heavy constituents, etc. Common to all these transformations is that they do not affect the modifier-head relations of the input. The consequence is that a modifier and its head need not be sister constituents any more at the surface level. We are often very uncertain about the syntactic structure of sentences containing such discontinuous constituents. This suggests that our intuitions on the modifier-head relations in a sentence basically form our concept of its syntactic structure. For instance, the b-sentences below contain the same grammatical relations as the more basic a-sentences, but have a different, more elusive syntactic tree structure:

- (4) a. Pelle lämnade boken där.
b. Där lämnade Pelle boken.
- (5) a. Jag vet att Pelle träffade någon.
b. Jag vet vem Pelle träffade.
- (6) a. Jag läste en uppsats som behandlade ordföljd i går.
b. Jag läste en uppsats i går som behandlade ordföljd.

But there are also transformations in Swedish that do change the modifier-head relationships. One example is sentence adverbial lowering, which generates (2) out of (3a). In sentence (2), säkert is analyzed as a modifier to the verb, not to the sentence. Other examples are possible transformations like passive formation and flip-movement, and probably tough-movement. The b-sentences below contain grammatical relations different from those in the a-sentences:

- (7) a. Svenskarna talar svenska.
b. Svenska talas av svenskarna.
- (8) a. Ordföljden förundrar grammatikerna.
b. Grammatikerna förundrar sig över ordföljden.
- (9) a. Det är svårt att analysera denna sats.
b. Denna sats är svår att analysera.

The transformations that have applied in (7-9) b. therefore belong to a different class of transformations, and it is in fact questionable whether they have the same psychological reality as the transformations that applied in (4-6) b. It seems that the modifier-head relationships are fixed at some intermediate stage in the derivation, and that no later transformation can change them. This intermediate stage will here be labelled basic structure. Sentence adverbial lowering, passive formation, flip-movement and tough-movement will then be examples of pre-basic transformations, which can change both syntactic structure and grammatical relationships. Fundamentatation, question word and relative pronoun movement, subject-verb inversion, and extraposition of heavy constituents will be examples of post-basic transformations, which can change syntactic structure, but not grammatical relations, thereby often giving rise to discontinuous constituents.

It is of course an empirical question whether such a strict division between pre-basic and post-basic transformations can be maintained, whether pre-basic transformations can be formulated to explain the differences between semantic and syntactic modification, and whether the post-basic transformations can explain all instances of discontinuous constituents. The level of basic structure is strictly speaking defined by our intuitions on surface grammatical relations, but is of course fully justified only when have been able to formulate transformations that form a coherent system. A problem is that our intuitions can be vague. It is hard to determine whether en gubbe is the subject of both (10 a) and (10 b), or whether it is an object-like complement in sentence (10 b), i.e. whether existential subject movement is a post-basic or a pre-basic transformation:

- (10) a. En gubbe satt på trappan.
b. Det satt en gubbe på trappan.

So far, the level of basic structure has to be regarded as a hypothetical one. It could be suggested that basic structure is identical to shallow structure, or that the pre-basic transformations are identical to the cyclic ones, while the post-basic transformations are post-cyclic. However, this question will not be further discussed here.

If we assume that post-basic transformations can be constructed to take care of all discontinuous constituents, then the basic structure has the form of a syntactic tree where all modifiers occur next to their heads (with the possible exception that another modifier to the same head intervenes). A head and its modifiers are sister constituents at the level of basic structure, and together they form the next higher constituent. This leaves us two possibilities: the modifier either precedes or follows the head. In this paper, I shall try to investigate the parameters affecting the choice between preposed and postposed modifiers at the level of basic structure in Swedish. I shall also discuss the ordering between sister constituents that cannot be labelled modifier and head.

The ordering between sister constituents at the level of basic structure can be explained in two basically different ways. Firstly, it can be seen as the output of the preceding rules. The phrase-structure rules will generate a linearized tree structure, and the pre-basic transformations will operate on this structure, possibly changing the order of the constituents, thereby indirectly defining the order at the level of basic structure. The other possibility is that the phrase-structure rules generates a hierarchic, but non-linearized tree structure, where the order between sister constituents is not defined. Special linearization rules would then operate at some later stage in the derivation, e.g. the level of basic structure, determining the order between any two (or more) constituents. I shall here argue that it is possible to formulate such linearization rules, or general principles governing the order between sister constituents in the basic structure. This might be a weak argument in favour of the second solution, since such general principles would be quite accidental in the first solution, where the ordering would be defined by the application of previous rules. We would have to adopt a solution containing remarkable conspiracies, since several different pre-basic rules would create the same kind of orderings.

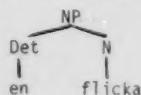
On the other hand, this is not at all impossible, and I cannot present any evidence that the ordering takes place only at the level of basic structure. The principles might be valid at several stages in the derivation.

Of course, we do not always know exactly what the basic structure of a sentence looks like. A specific surface ordering might be created by the linearization rules (alternatively the pre-basic rules), or by post-basic rules, and it is often very hard to distinguish between these two alternatives. For example, a post-basic transformation can propose a basically postposed modifier, or alternatively, the modifier might occupy the preposed position already in the basic structure. For instance the placement of adjectival attributes has been described in both ways in the literature.

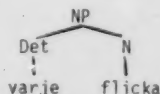
The intuitive terms modifier and head have been widely used in traditional grammar, but so far no one has been able to give them an exact definition (cf. Brodda (1975)). The distinction has been related to the distinction between exocentric and endocentric constructions. In exocentric constructions two or more constituents are combined to form a constituent of a new type, different from the type of either one of the original constituents. Here the modifier-head relation is not applicable. In endocentric constructions one or more of the immediate constituents belong to the same distributional class as the entire construction. Here it is quite natural to speak of modifier and head: the head is the constituent that belongs to the same class as the final result. If there are several such constituents the problem of distinguishing modifier and head still remains: this is the case for nominal attributes, and they will not be discussed here. Neither is the distinction applicable to conjoined structures. I shall here adopt this rough definition of the terms modifier and head.

Exocentric constructions. Some examples of Swedish exocentric constructions are given in (11-14).

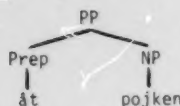
(11)



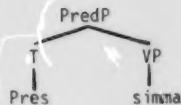
(12)



(13)



(14)



There is a clear rule for the ordering between these sister constituents. An article, a quantifier, or a preposition precedes its sister constituent, i.e. an item that belongs to a very restricted or even closed class and has no internal structure precedes an item that belongs to an open class and possibly has a fairly complicated internal structure. Ostensible exceptions from this rule are cliticized elements, like the postposed definite article (*pojken*+en) or the tense endings (*simma*+r). They are attached to the head word of their sister constituent, probably by a post-basic transformation. Observe that they also are exceptional insofar that they can cause the sister constituent to be discontinuous, as in *pojken i Kryddhulta* or *simmar 400 meter*. These expressions refer to a unique instance of the genus "pojke i Kryddhulta", and a present instance of the action "simma 400 meter". The postulation of a post-basic clitic movement transformation will save our generalization of the ordering and make these structures semantically regular. On the other hand, this transformation seems to blur our intuitions of the grammatical relations in the construction to a certain extent, which runs counter to our view of a post-basic transformation.²

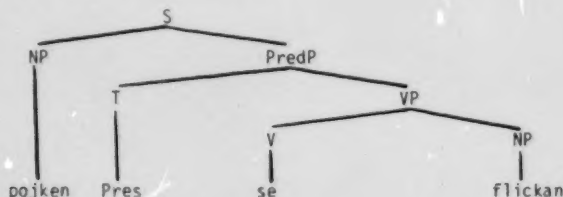
In other words, the Swedish language has a tendency to prefer right branching structures rather than left branching structures, placing the more complicated immediate constituent last in a construction.

The combination of a noun phrase (a subject) and a finite verb phrase is also an exocentric construction, giving rise to a sentence. This is an abnormal exocentric construction so far, in that both members of the combination belong to open classes. There is another similar construction: the combination of a verb and a noun phrase (an object) to form a non-finite verb phrase. But it can be observed that the item from the more restricted class precedes the other one here, too. There are probably fewer verbs than noun phrases in the language, or at least fewer verbs are actually used. Similarly, the class of noun phrases can be said to be more restricted than the class of verb

phrases, although both classes are strictly speaking infinite, since a very common type of verb phrases contains one or several noun phrases and therefore can be varied at least as much as a noun phrase. But this might be a coincidence.

Observe also that the ordering subject - verb - object creates a correspondence between linear order and hierarchical structure. The noun phrase that is placed higher in the syntactic tree precedes the one that is placed lower.

(15)



This rule for noun phrases can be compared to a similar one concerning quantifier expressions. When two quantifiers occur in the same sentence, the quantifier with the widest scope (according to Lakoff (1971): = the widest sister constituent in an underlying structure) generally precedes a quantifier with a more narrow scope. In (16), many precedes few and also has the widest scope:

(16) Few books are read by many men.

The rule that height in the syntactic tree should be reflected in the linear order can perhaps explain why the subject precedes the predicate. If it followed the predicate, it would also follow the object. But we have to suggest other arguments, like the one involving openness of classes, to explain why the object follows the verb. An additional explanation might be that it is easier to distinguish between subject and object, if the first one precedes and the second one follows the verb, but this is only a speculation.

Endocentric constructions. It seems to be harder to give ordering rules for endocentric constructions than for exocentric ones. Modifiers sometimes precede, sometimes follow their head.

As to nominal and adjectival heads, purely formal criteria seem to determine the ordering. Modifiers consisting of sentences, verb phrases,

or prepositional phrases follow their head.

- (17) Jag såg en skata som skrattade.
- (18) Jag är yngre än du är.
- (19) Jag har en räkning att betala.
- (20) Du är fri att avlägsna dig.
- (21) Jag vill ha en karl med skägg.
- (22) Han var rädd för åskan.

To a certain extent this can be explained by reference to the right-branching principle: these modifiers have a complicated internal structure. However, this is not true of adverbial attributes and certain adverbial modifiers of adjectives, which also follow their head.

- (23) Vägen västerut lockade många.
- (24) Häligheten är öppen nedåt.

Note that these adverbs also can occur as modifiers of verbs, following their head. We can perhaps derive the adverbial attributes from such modifiers of verbs or from prepositional phrases (västerut from mot väster), thereby providing at least a partial explanation of the ordering.

Adjectival modifiers, on the other hand, are preposed. The same holds also for most adverbial modifiers of adjectives and adverbials.

- (25) Birgitta av Vadstena var en stor personlighet.
- (26) Häligheten är mycket stor.
- (27) Han sprang förvånansvärt snabbt.

The preposed adverbials are often derived from adjectives (förvånansvärt) or correspond to adjectives semantically (mycket corresponds to stor). Therefore they can be regarded as belonging to an intermediate class between adjectives and true adverbs like nedåt, which are always postposed and are not inflected like adjectives even when they modify nouns.

It is hard to determine whether the preposed modifiers in (25-27) are placed in their surface position already in the basic structure, or whether they are moved there by a post-basic transformation. It has been proposed that adjectival attributes be generated from (postposed) relative clauses. If this is possible, we might be able to defend a hypothesis that all modifiers are postposed in the basic structure.

It is hard to detect any deeper reason for the preposing of adjectival attributes. Sometimes the preposing is in accordance with the right-branching principle. Quite often a simple adjectival modifier modifies a complex head, which gives rise to a right-branching structure:

(28) Där går en avslöjad falsk profet.

But this is not always the case, since the modifier can itself be modified:

(29) Han är en mycket angenäm bekantskap.

Here we get a left-branching structure, which is otherwise avoided. But observe that the postposed attributes always have a complex structure (except adverbials), while preposed adjectival attributes can consist of just one word.

However, an adjectival modifier with a complex structure can be postposed, too, in accordance with the right-branching principle. This is possible especially when the modifier of the modifier also is postposed, e.g. consists of a prepositional phrase:

(30) En trojka är en vagn dragen av tre hästar.

The first modifier is often a participle in this construction. However, such complex adjectival phrases can also precede their heads, exactly like other adjectival modifiers. Here arises a conflict between two criteria for the placement: actual complexity speaks in favour of postposition, and distributional class in favour of preposition.

(31) En trojka är en av tre hästar dragen vagn.

Observe that all modifiers of such a preposed modifier are themselves exceptionally preposed. Once we have made a left-branched modification, the next lower modification must also be left-branched. This holds true for all adjectival attributes with modifiers:³

(32) Jag är en från vanföreställningar fri människa.

(33) Jag är en mycket fattig man.

The corresponding constraint on postposed adjectival modifiers that they take only postposed modifiers is not so heavy. A postposed modifier can take a preposed modifier, if it is prosodically marked as a unit and

separated from its head by a small break.

(34) På stolen låg en bok, tämligen illa medfaren.

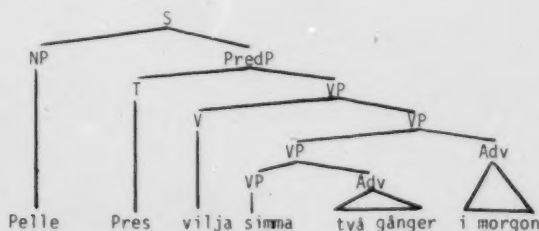
It is then possible to postpose almost any complex adjectival modifier, although the motivation to postpose a modifier containing a preferably postposed modifier is much stronger than in other cases. The restrictions on the structure of a preposed modifier are then heavier than the restrictions on postposed modifiers, which indicates that preposed modification is a more rigid combinatory mechanism than postposed modification.

Verbs normally take postposed modifiers.

(35) Pelle simmade två gånger i Arizona.

But the postposition has a strange consequence, viz. a disturbance of the correspondence between height in the syntactic tree and linear order. If a verb phrase has a hierarchical rather than a parallel structure, the higher adverbial will follow rather than precede the lower adverbial:

(36) Pelle vill simma två gånger i morgon.



In the same way, when two quantifiers occur in two postposed adverbials, the quantifier with the wider scope follows the other one.

(37) Han hade stekt köttbullar med två gafflar fem gånger.

(38) Han hade stannat på många ställen i fem kommuner.

In (37), the natural interpretation is not that the same two forks were used five times, but rather that five times were such that two forks were used at that time. Similarly in (38), it is the communes that contain the places, not the places that contain the communes.

It can then be doubted whether it is possible to maintain a correspondence between height in the syntactic tree and linear order in Swedish. Still I think that such a principle can be defended. The reason is that sentences like (35) and (37-38) are often avoided. Instead, transforms of the sentences are used, where height and linear order do correspond. One way is to fundament the higher adverbial, as in (39):

(39) I morgon vill Pelle simma två gånger.

Another way is to prepose the higher adverbial to the verb phrase:

(40) Han hade fem gånger stekt köttbullar med två gafflar.

(41) Han hade i fem kommuner stannat på många ställen.

Strictly speaking, the modifier is not always preposed to the verb phrase that it semantically modifies, but rather to the entire predicate phrase, including tense endings and modal verbs. This is clear from examples with adverbial preposing in a subordinate clause, where the preposed adverbial precedes also the finite verb:

(42) Jag vet att han i fem kommuner kan ha stannat på många ställen.

In (42), kan ha intervenes between the adverbial i fem kommuner and its head stanna på många ställen. In main clauses, on the other hand, the finite verb is moved to second position in the sentence, so that the preposed adverbial will not precede all the predicate phrase in the surface structure. This is an argument for introducing the preposing transformationally, rather than letting it be present already in the basic structure. If i fem kommuner occupied the preposed position in the basic structure, one would have expected it to be preposed to its semantic "head" not to the entire predicate phrase. On the other hand, we might also be able to construct a solution where modals and tense verbs like kan and ha are moved down into the predicate phrase to a position immediately in front of the main verb. If this is possible, the adverbial can be preposed in the basic structure, since the verb lowering transformation can be post-basic.⁴

In any case, the adverbial preposing restores the correspondence between height in the syntactic tree and linear order. When the verb phrase contains only one adverbial modifier, the need to prepose it is

not felt to be very strong, perhaps because there is no disturbance in the correspondence.

(43) Han hade stannat-i fem kommuner.

(44) ?* Han hade i fem kommuner stannat.

But the ungrammaticality of (44) might also depend on a tendency to avoid verb-final sentences. An alternative motivation to prepose an adverbial might also be a tendency to avoid sentences ending in too many adverbials, or too long sequences of adverbials.

An adverbial modifier high up in the syntactic tree is often psychologically primary to lower modifiers, and sometimes to the main verbs as well. It can for instance describe a general frame for the event of the sentence, modify it as to place, time, frequency, etc. The rest of the verb phrase often contains only new information. These modifiers belong to the psychological theme of the sentence rather than to the rheme, and are often preposed.

(45) I Finland hade han studerat medeltida borgar.

(46) Han hade i Finland studerat medeltida borgar.

Adverbials containing new information, on the other hand, are almost never preposed. A natural answer to the question in (47) is (48), possibly (45), but not (46).

(47) Var hade han studerat medeltida borgar?

(48) Han hade studerat medeltida borgar i Finland.

But even if we assume that the adverbial preposings discussed above are carried out by post-basic transformations, it is not certain that all adverbial modifiers have occupied a postposed position in the basic structure. Some adverbials might be generated from verbs in higher sentences. Since these sentence adverbials normally can never be postposed to the verb phrase, unless they are parenthetical additions, it is natural to assume that they are moved from a higher sentence directly into their preposed surface position. Cf. the derivation of (2) from (3). If so, the basic structure still contains preposed adverbial modifiers of verbs.

The so-called special sentence adverbials (*särskilda satsadverbial*) are also always preposed, which might have a similar explanation: they

can be moved into that position from a higher sentence or a conjoined sentence.

(49) Bara Pelle var där.

Observe also that they belong to a closed class and have no internal structure. The actual ordering is therefore compatible with the right-branching principle. Note in passing that the special sentence adverbials cannot be labelled attributes, since they do not modify nouns, but rather full noun phrases. Therefore they do not constitute exceptions to the rule that adverbial attributes are postposed.

It is no coincidence that preposed modifiers occur mainly with nouns, adjectives and adverbs, while verbs take almost exclusively postposed modifiers. Jespersen (1937) introduces the notion rank of a modifier (adjunct). A modifier to a verb is of a higher rank than a modifier to a noun, an adverbial or a predicative adjective, since the latter modifiers normally occur inside an expression functioning as a modifier of a verb. A modifier to an adjectival attribute is of a still lower rank, etc. We can now observe that high rank is connected with postposed modifiers, while low rank is connected with preposed modifiers. Verbs take postposed modifiers, with the possible exception of certain manner adverbials. Adverbials preposed to the entire predicate phrase (in main clauses, occurring immediately after the finite verb) are probably moved there by a transformation. Modifiers of nouns and predicative adjectives are of a lower rank and are obligatorily postposed only if they consist of a sentence, a verb phrase or a true adverb, and optionally if they consist of an adjectival phrase, especially one with postposed modifiers. Modifiers of an attribute or an adverbial are always preposed, except when the head noun is itself a postposed modifier. It can even be argued that these exceptions are some kind of appositions, and that such appositions are of a higher rank than the corresponding preposed modifiers, thereby taking postposed modifiers themselves. If we go to still lower ranks, we shall find that the preposed modification is the only possible one. Within a word, a modifier is always preposed, regardless what type of head it modifies:

(50) Detta är ett tegeltak. (Cf. tak av tegel)

(51) Han utbredde mästarens lära. (Cf. bredde u' läkanet)

Borderline cases. Sometimes it is hard to distinguish between exocentric and endocentric constructions. An object, for instance, is intuitively felt to be a modifier of the predicate verb, although the combination of verb and object seems to form an exocentric construction, according to our criteria. The traditional grammatical analysis might of course have influenced our intuitions, but the basis of the intuition could also be the fact that the object is not always obligatory, but can be omitted.

(52) Får jag be er vara tysta, presidenten äter (middag).

In such cases it might seem natural to analyze the main verb as a verb phrase in itself, and the addition of an optional object will then in fact create an endocentric construction. Another similarity between objects and adverbials, which facilitates such an analysis, is the fact that both objects and adverbials are postposed to the main verb or verb phrase. It is therefore natural to treat them both as modifiers.

Other cases that are hard to classify are some pronouns and quantifiers, which could be analyzed either as articles (determiners) or as attributes.

(53) Det här är min bror.

(54) Han har många duvor och matar varje dag de många duvorna.

It might seem odd to classify the first occurrence of många in (54) as a determiner and the second one as an attribute. One argument for analyzing these questionable words as attributes can be built on the fact that they can occur in predicative position:

(55) Duvorna är mina och de är många.

Again, the borderline between determiners and attributes is blurred by the fact that both these types are preposed to their sister constituent, the noun.

Another indeterminacy arises from the fact that a determiner could also be analyzed as the head of an endocentric construction. E.g. denna, vilken, alla etc. need not be followed by a noun, and it can be argued that such optional constituents should always be regarded as modifiers.

(56) Jag vill inte ha den här.

(57) Jag vill inte ha den här aladåben.

On the other hand, it can also be argued that a head noun (e.g. aladåb) is deleted by a post-basic transformation in sentences like (56). Such a rule must be postulated anyway, since it explains why an adjective can acquire the distribution of a noun in sentences like (58):

(58) Jag skall ge dig en blomma. Här har du en riktigt vacker.

But even if we analyze determiners as heads and the sister noun as a modifier, we need not revise our ordering principles too radically. Observe that such a modification would be of a rather high rank (one degree higher than the modification of a noun). According to our principle, the modifier should therefore be postposed.

The principles. The parameters affecting the choice of ordering between sister constituents at the level of basic structure in Swedish seem to include at least the following ones:

1. The endocentricity of the construction. Exocentric constructions obey principles 2. and 3., endocentric constructions principles 4. - 6.
2. The complexity of the constituents. Constituents with a complex internal structure tend to follow a sister constituent without any internal structure, i.e. right-branching structures are preferred. Prepositions, determiners, and probably tense endings precede their sister constituents. This principle might be an underlying rationale behind more formal rules referring to the distributional class (categorical label) of the items, since the ordering is the same even when the postposed sister constituent has no internal structure, and neither order would give rise to left-branching structures. Principle 2. can perhaps be re-phrased as 3:
3. The openness of the distributional classes of the constituents. Items belonging to closed classes tend to precede constituents belonging to open classes.
4. The rank of the modification in an endocentric structure. Modifiers of verbs are postposed (however, cf. principle 7.), since they have high rank, modifiers within a word are always preposed. For intermediate ranks, see principles 5. - 6.

5. The distributional class of the modifier. Sentences, verb phrases, and true adverbials follow a (nominal or adjectival) head, but the corresponding adjectival modifiers precede their heads. Again, the underlying rationale behind this principle might be principle 2: the more complex constituent tends to be postposed. Actually, the complexity criterion 2. can take precedence to principle 5., since an adjectival attribute (including participles) with a complex structure can be postposed, although adjectival attributes normally precede their head. -

Furthermore, adverbial modifiers of adjectives and adverbs, which correspond to adjectives, are preposed. This tallies with principle 4.

6. The place of the head in relation to its own head. Preposed attributes take only preposed modifiers, regardless of the distributional class and complexity of the modifier. Again, this does not contradict principle 4. Modifiers of this low rank are generally preposed, and can be postposed in accordance with principle 5. only when the head is itself postposed to its own head. Principle 6. is an exception from principle 5. valid only inside attributes; predicate adjectives are of a higher rank and conform to principle 5.

7. Height in the syntactic tree. This is a more dubious principle, which might be valid for some exocentric constructions, too. Higher constituents tend to precede lower ones of the same distributional class, e.g. subjects precede objects. Eventually, the principle can also account for preposed verbal modifiers, which would constitute exceptions to principle 4. But it is more likely that principle 7. motivates transformations, e.g. adverbial preposing and fundamentation, changing the basic structure towards a better correspondence between height in the syntactic tree and linear surface order.

From the list above it appears that the word order at the level of basic structure is very rigid in Swedish. Two sister constituents generally have to occur in a specific order. The only modifiers that can be either preposed or postposed are complex adjectival attributes (and possibly some adverbial modifiers of verbs, depending on what specific solution is adopted). It could also be argued that adverbials of setting modify the entire sentence and that they can be either preposed or postposed:

(59) Jag bodde i Mariehamn på sextiotalet.

(60) På sextiotalet bodde jag i Mariehamn.

However, an adverbial of setting can also be placed inside the sentence, exactly like most other adverbials:

(61) Du vet att jag på sextiotalet bodde i Mariehamn.

Therefore it is most natural to assume that adverbials of setting are verb phrase modifiers at the level of basic structure. They are placed after their head but can be moved around later on by adverbial preposing and fundamentation.

The consequence is that a rotational model (cf. Enkvist, this volume) does not explain much of the ordering of constituents at the level of basic structure in Swedish: we do not have a choice between preposition and postposition of modifiers. It is also doubtful whether the thematic structure of a sentence affects the ordering at this level. Rather, the thematic structure of the sentence can motivate later transformations, like adverbial preposing and fundamentation. The optional transformations can then be seen as a correcting device, creating a better correspondence between linear surface order and thematic structure. The unmarked word order of (62) is changed in (63) and (64) because of the context, since we prefer to start the sentence with an old discourse referent:

(62) Svenska kungen tog emot president Kekkonen i Stockholm.

(63) Vad hände i Stockholm? - I Stockholm tog svenska kungen emot president Kekkonen.

(64) Vad hände president Kekkonen? - President Kekkonen tog svenska kungen emot i Stockholm.

However, sometimes the post-basic transformations are not capable of generating a thematically optimal surface order. If the thematically bad basic structure cannot be repaired, we have to choose a new basic structure, for instance by applying a pre-basic transformation like passive or by re-wording the sentence:

(65) Vad hände president Kekkonen i Stockholm? - I Stockholm togs president Kekkonen emot av svenska kungen.

In (65) there is a need to prepose both i Stockholm and president Kekkonen, but since only one constituent can be fundamented, the former object has to be preposed by the passive transformation. The passive transformation can also be applied in (64), instead of fundamentation,

which does not willingly apply to objects under certain conditions:

(64') Vad hände president Kekkonen? - President Kekkonen togs emot av svenska kungen i Stockholm.

It would then seem that pre-basic transformations like the passive transformation are teleological in the sense that their motivation can be found much later in the derivation: they serve to create thematically more acceptable structures at the surface level. But they need not apply if the desired effect is accomplished by another, later transformation, like fundamentation. To a certain extent the pre-basic transformations can look forward in the derivation to see what post-basic transformations will apply. Alternatively we can say that the requirement that the surface linear order conform to the thematic structure of the sentence is a surface constraint, which filters out ill-formed surface sentences.

I have here viewed syntax as basic, and thematic considerations as secondary. The word order at the level of basic structure in Swedish is almost exclusively determined by internal factors, such as the complexity and the distributional class of the constituents, the rank of the modification etc. Considerations of context, or of the thematic structure of the sentence, influence the choice of pre-basic and post-basic transformations and the choice of sentence to communicate.⁵

FOOTNOTES

¹ Judgements are especially vague in certain passive sentences, which could be analyzed in two ways.

(i) Det dracks vin hela kvällen.

Sentence (i) could be regarded as an impersonal passive like sentence (ii), and in this case vin is clearly an object.

(ii) Det dansades hela kvällen.

But sentence (i) could also be regarded as a transform of sentence (iii), and in this case it is exactly parallel to sentence (10 b).

(iii) Vin dracks hela kvällen.

² Another argument for a transformational solution is the fact that cliticized elements have to occur fairly early in their sister constituents. The Swedish tense ending is attached to the first verb, and when a noun with a definite postposed article is preceded by an adjectival attribute, the definiteness must also be marked by a preposed article (den lilla pojken). Similarly, in a language like Finnish, which has case endings rather than prepositions, agreement occurs, putting each attribute in the appropriate case. That is, the information on case or definiteness, given by the cliticized element, cannot be delayed too much, but must be given fairly close to its position in the basic structure. This observation is due to Fred Karlsson.

³ Observe that infinitives cannot be preposed in this way.

- (i) Han var en diktare van att skriva.
- (ii) *Han var en att skriva van diktare.
- (iii) *Han var en van att skriva diktare.

⁴ There are sentences where a manner adverbial is not preposed to the entire predicate phrase, but rather to the verb phrase it semantically modifies:

- (i) Vetenskapsmannen lär ha kritiskt belyst miljövärdproblemen.

(The example is from Rauhkonen (1974).)

However, this is possible only under certain poorly understood circumstances. In most cases sentences with a manner adverbial preposed to its head rather than to the predicate phrase are questionable:

- (ii) ?Läraren berättade, att Kalle hade omsorgsfullt gjort sina hemuppgifter.
- (iii) Läraren berättade att Kalle omsorgsfullt hade gjort sina hemuppgifter.

A manner adverbial then seems to be more firmly attached to its head than other adverbials, which have to precede the entire predicate phrase, when preposed. The reason might be that the manner adverbial modifies the verb rather than the verb phrase, and therefore enters into a more rigid combination with its head, being a modifier of lower

rank. Observe also, that manner adverbials generally precede a participial head, unlike other adverbial modifiers:

(iv) Han blev hjärtligt mottagen av sin värd.

⁵ I want to thank the members of the Text Linguistics Research Group and the participants in the symposium for valuable comments on earlier versions of this paper.

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WHAT IS NEW INFORMATION?

This paper is devoted to clarifying the concepts of OLD (or GIVEN) and NEW INFORMATION. There are several ways in which these terms can be understood, and it seems to me that the definitions that linguists have given to them sometimes confuse phenomena that should be kept apart, and also that different researchers have had rather different things in mind without always being aware of this.

The problem becomes more difficult through the fact that there are other concepts in the area of FUNCTIONAL SENTENCE PERSPECTIVE (or whatever term we prefer to use) which are not always kept apart from the ones we are discussing. Thus the concept of TOPIC or THEME is often defined in terms of OLD or GIVEN information, but it is also often understood in terms of 'what the sentence is about'. I shall not discuss the latter concept here (I have done so in other places, e.g. Dahl 1974a, 1974b, 1975); I just wish to point out that TOPIC in that sense is a different concept from OLD INFORMATION, although their extensions of course overlap.

The concepts of OLD and NEW INFORMATION are used to explain such phenomena in language as intonation, stress, word order, and the use of anaphoric devices. It is usually said that some constituents in a sentence 'convey new information' and others do not. It follows from such a claim that the total information conveyed by a sentence (whatever that is) can in some way be 'factored' so as to be divided among the constituents. Each constituent carries its own chunk of information, as it were. Strangely enough, one seldom questions this latter assumption, nor does one ask oneself very often what it means to 'convey information' or what information is in the first place.

Let us consider some different ways of understanding 'information'. To start with, let us distinguish INTENDED and UNINTENDED information. Unintended information would be just anything that the addressee or any person who happens to listen to an utterance can figure out from the form or content of the utterance. For instance, the dialect that the speaker uses gives information about his geographical and social origin. In this

paper, we shall only consider intended information, i.e. such information as the speaker wilfully conveys or tries to convey.

After this reservation, let us consider one important use of declarative sentences, namely as a means to influence the addressee's picture of the world. In such cases, the speaker assumes that the addressee has a certain picture - or model - of the world and he wants to change this model in some way. We might then identify THE OLD or THE GIVEN with the model that is taken as a point of departure for the speech act and THE NEW with the change or addition that is made in this model. OLD will here be equivalent to PRESUPPOSED in one sense of the term. We can say that the addressee receives 'new information' in the sense that he comes to know or believe more about the world than he did before. What he believes may be true or false - the information he gets about the world may be correct or incorrect. If we accept the last statement, it follows that the object of his belief or the new information must be something which is capable of being true or false - that is what is usually called a proposition. Let us therefore call this kind of information PROPOSITIONAL INFORMATION. A proposition can - at least theoretically - be expressed by a sentence, and it follows that only to the extent that we can analyse the meaning of a sentence into propositions is it possible to associate the constituents of the sentence with chunks of propositional information.

I shall consider a problematic case. Take a sentence containing a definite description, such as

(1) The capital of Sweden is beautiful.

Can we say that the definite description the capital of Sweden conveys propositional information? As is well known, definite descriptions used as in (1) are connected with presuppositions, in particular with the presupposition that there is something that suits the description, i.e. an existential proposition ('There is a capital of Sweden'). The question is now whether we can say that the definite description conveys this proposition. I think it is clear that the noun phrase BY ITSELF does not convey the existential proposition, since a noun phrase may be used in many ways, some of which are not connected with existential presuppositions at all. So the reasonable alternative would seem to be to say that the noun phrase AS USED IN THE SPEECH ACT conveys the existential presupposition. But there is a problem with this formulation. What is the difference

between saying that a certain constituent conveys some proposition as used in a certain context and saying that it is the combination of all the constituents which constitute the context that convey this proposition?

With Russell, we could suggest to paraphrase (1) as follows:

(2) Sweden has exactly one capital and if something is a capital of Sweden, it is beautiful.

Assuming that this paraphrase is adequate, what gives us the right to associate the first clause of it with the subject noun phrase of (1) rather than with the whole sentence? You can take this question as a rhetorical one, i.e. as indicating that I do not believe we have any such right. Some of you might feel challenged to find an answer, though.

Let us now proceed to another way of looking at OLD and NEW. Chafe (1974:111) says: 'Given information is suggested to be that which the speaker assumes to be already present in the addressee's consciousness at the time of an utterance...'. Clearly this concept is different from the one we have been discussing so far, since something that the addressee knows or believes need not be in his consciousness at any given moment. When reading Chafe's paper, it also becomes clear that the entities that may be given or new in this theory differ from what we have said earlier: he is talking of the givenness of CONCEPTS. Cf. 'If I use low pitch /on the NP books in a certain sentence D.D./ I am communicating my assumption... that the concept "books" was... already in your consciousness.' The concepts may be generic (as in the example quoted) or individual (e.g. the concept of a certain person). Chafe's general claim is that 'new' concepts are pronounced with high pitch and 'old' concepts with low pitch. (Most treatments would talk about strong and weak stress instead, but I will not go into this question.) I find Chafe's use of the term 'information' rather strange. He seems to equate 'expressing a concept' and 'conveying information'. Although it is obvious that 'information' must be used in another sense than propositional information as we have defined it, it is hard to see from his 1974 paper what he has in mind. If one goes to Chafe (1970), however, one finds there a general theory of how language works that probably is what lies behind his terminology also in Chafe (1974). The general idea is that language is used to 'transfer ideas from one to another' (1970:16). More specifically: 'In its broadest outline, language involves the following process. A configuration of

concepts arises within the nervous system of a human being, who, for some reason, often but not necessarily associated with purposeful communication, is led to convert these concepts into sound. The sound travels to whatever other persons are within hearing distance, and is normally reconverted within their nervous systems into some facsimile of the original concepts. As an example of a simple communication system, Chafe mentions 'a town whistle that is sounded every day at noon, and only then'. 'The concept It is noon is transformed into a whistle blast that passes through the air and strikes the ears of people in the town, who reconvert the sound into a cognizance of noon'. The formulation 'the concept It is noon' suggests that sentences express concepts. This is correct, but it misses the fact that the function of declarative sentences (and of the town whistle in Chafe's example) goes beyond the simple transfer of an image from one mind to another. We do not just get a picture of noon when we hear the sentence uttered or the whistle blown, we are also induced to believe that this picture corresponds to reality, i.e. that the proposition is true. If we do not acknowledge the difference between activating a concept and inducing a belief, we cannot distinguish the functions of sentences such as Imagine a lion in the garden and There is a lion in the garden. I spent so much time discussing Chafe's general theory of language because I think similar views are rather widespread and blur the distinction between propositional information and other concepts involved in describing linguistic communication. Besides, the idea that concepts are 'conveyed' creates difficulties for Chafe's own distinction between old and new information, since it is hard to see what it means to 'convey' a concept to a person if it is already there in his consciousness. However, if one ignores the use of the terms 'information' and 'convey', there are many good insights to be obtained from Chafe's 1974 paper. I'll try to formulate the main idea in slightly different terms. When an addressee interprets a certain utterance, he makes use of a number of concepts, generic or individual. Some of these concepts may be present in his consciousness already (they are stored in his short-term memory or whatever corresponds to 'consciousness'), some must be activated, i.e. retrieved from some deeper place in his mind (such as his long-term memory). In making the utterance, the speaker makes a hypothesis about what concepts must be activated and what concepts are already present. We need some terms to refer to this distinction, so let us talk about ON-STAGE CONCEPTS and OFF-STAGE CONCEPTS, with the theater metaphor that has often been used in this connection.

A similar distinction has been made by many linguists. For instance, the term CONTEXTUAL BOUNDEDNESS has been used by some Czech scholars (e.g. Sgall et al. 1973) for roughly the same concept. But confusion is again close at hand. We must also make a distinction between concepts which are known to the addressee but which must be retrieved from his long term-memory and concepts which are totally new to him. For the latter case, the term 'new' or 'unknown' is indeed appropriate. Whereas the distinction between on-stage and off-stage concepts is important for the assignment of stress (or, according to Chafe, of high and low pitch), the distinction between KNOWN and UNKNOWN concepts is above all relevant for the choice between definite and indefinite noun phrases. That is, known concepts - whether they are on-stage or off-stage - are referred to with the help of definite noun phrases, and unknown concepts are introduced - at least in many cases - by indefinite noun phrases.

Kuno (1972, 271) introduced a concept of ANAPHORICITY which seems to be intended to cover the distinction between 'known' and 'unknown', in our own terms. He makes himself guilty of another confusion, however. There is another possible way of understanding 'old' and 'new', namely in terms of PREVIOUS MENTION. This, in its turn, can be understood in two ways: either as referring to words or phrases or to their referents. If we choose the second alternative, 'old' concepts would be a subclass of what we call 'known' concepts, namely those which are assumed to be known in view of having been mentioned in the preceding text, as distinguished from those which are known from the extralinguistic context. This may well be an important distinction. The first alternative is, I think, a rather uninteresting one: the distinction here is between linguistic expressions that appear for the first time in a text and those which don't. Kuno, however, confuses these two alternatives. First, he says that anaphoricity refers 'to the registry of discourse - for example, to whether the referent of a given noun phrase has already been mentioned in the previous discourse'. Then he says about a noun phrase from an example sentence: 'the lexical item Tom is anaphoric because it must have been previously mentioned in the discourse and/or its referent is uniquely identifiable.' I am mentioning this not in order to castigate Kuno but because people who write or talk about these things often make the same mistake.

We shall now proceed to still another way of interpreting 'old' and 'new information'. Once more, we turn to Kuno (1972). He uses the terms PREDICTABLE and UNPREDICTABLE more or less as equivalents to 'old' and 'new'. We can quote his discussion of the concept of predictability as applied to themes (topics):

'The theme...is what a sentence is about. We have a predictable theme if in a given context, one can predict what the next sentence is going to be about.'

Examples of predictable and unpredictable themes would be the italicized occurrences of John in the following two discourses, respectively:

(3) Will John do it? If he can, John will do it.

(4) Mary is a singer, and John is a composer.

In (3), the fact that the second sentence is an answer makes it possible to predict¹ that it is going to be about John. (Again, one should keep apart expressions and their referents here. What is predictable or unpredictable is clearly the identity of the referent of John rather than identity of the noun phrase itself. For instance, we could have used (and would probably more naturally have used) a pronoun instead of John in (3).

Kuno claims that the concept of predictability is relevant among other things for the choice between the particles wa and ga in Japanese and for pronominalization in English.

What are the relations between the concept of predictability and other interpretations of the concepts of old and new information? Clearly, it is distinct from propositional information. Rather than information about the world we are here dealing with information which determines the future course of a conversation. We can say that the listener has at any given moment certain expectations about how the speaker is going to continue what he is saying. To the extent that the choice of an expression goes counter to (or rather perhaps is not predicted by) these expectations, this choice by the speaker constitutes new information in Kuno's sense.

Further, it is clear that Kuno's concepts of old and new information differ from Chafe's. Even if the theme of a sentence is chosen among the on-stage concepts, there may be several such concepts, and it may not be predictable which of them is to be chosen.

Kuno claims that 'predictable themes appear in discourses when the same topic continues, and unpredictable themes appear when new topics are introduced'. This will often be the case, but it cannot be upheld as a general rule. In fact, the claim is contradicted by some of Kuno's own examples. Consider the following (which is the English translation of one of Kuno's Japanese discourses):

(5) John, Mary, and Bill called on me. John gave me fruit. Mary gave me cookies. Bill brought me a book.

The NP that is interesting here is Bill in the last sentence. Kuno says that 'there are only three persons involved' and 'after the first two persons have been mentioned, there is only one person, namely Bill, left to be referred to'. Therefore, this NP is predictable. As we see, the statement that 'the same topic continues' does not hold here, since Bill is not the topic of the preceding sentence. We'll return to this problem in a moment.

I shall now introduce another concept, which I shall refer to as RECOVERABILITY², and compare it to Kuno's concept of predictability.

Suppose that a speaker has chosen a certain message (i.e. certain propositional information) that he wants to communicate to an addressee. He must then select a suitable form for his message. What requirements are to be put on this form? The first and most elementary requirement is that it should enable the addressee to reconstruct the content of the utterance. But since the addressee is an intelligent being, and, as we have said earlier, has certain expectations about what the speaker can possibly want to say, he will often be able to reconstruct the intention of the speaker without there being explicit indicators of just everything in the message. This is what makes possible the use of ellipsis and various anaphoric devices. Let us now define as RECOVERABLE any constituent which is such that the content of the message could be reconstructed even if the constituent in question were omitted. (It may well be that the omission of the constituent would give rise to an ungrammatical utterance, but that does not bother us here.) What is now the difference between recoverability and predictability? The concepts would be extensionally equivalent, i.e. cover the same cases, if the interpretation of utterances were a completely linear process, i.e. if each constituent were interpreted with the help of the preceding context only. However, in

understanding sentences, it is often the case that we cannot interpret a constituent until we have heard part of what follows upon it. This was one of the points of Lashley's famous paper (1951), and means that although all predictable constituents are recoverable, the converse does not hold: some recoverable constituents are not predictable. Consider, e.g., the following two sentences:

(6) Peter went to see Bill, but Bill was not at home.

(7) Peter went to see Bill, but Peter had to return.

The subject of the second clauses in (6-7) is not predictable, since we cannot guess it from the preceding context (Peter went to see Bill, but...)

It is recoverable, however, which can be seen from the fact that we have no difficulties whatsoever in understanding the sentences even if we substitute a pronoun for it:

(8) Peter went to see Bill, but he was not at home.

(9) Peter went to see Bill, but he had to return.

In other words, we use the following context to interpret the pronoun he in (8) and (9)³. It is thus recoverability and not predictability that is important for the possibility to use pronouns⁴.

Kuno, who does not distinguish the two concepts, claims that only predictable subjects can be deleted in Japanese, 'because what conveys new information, namely, what is not predictable, would be unrecoverable if deleted'. As we have just seen, however, this last claim is false.

The concept of recoverability does not explain everything, however.

Notice that (7) is rather awkward, if the second occurrence of Peter is not used contrastively. The alternative with a pronoun as the subject of the second clause - (9) - is much more natural. (6), on the other hand, is not so bad, although it also contains a full noun phrase.

Obviously, it has something to do with the fact that Peter occurs twice in (7). One could suggest that there is a constraint which disallows the repetition of noun phrases in certain contexts, but this explanation would not cover the following sentence pair, where the same difference in acceptability can be found:

(10) Ford went to see Humphrey, but the Senator was not at home.

(11) Ford went to see Humphrey, but the President had to return.

(where the Senator and the President are taken to refer to Humphrey and Ford, respectively).

(11) is almost as bad as (7). It seems that what we are dealing with here is rather a case of (almost) obligatory pronominalization. People who have studied pronominalization have most often concentrated on the rules which determine when it is possible to use pronouns, but have neglected the cases when pronominalization is obligatory or almost obligatory. Notice that we can also delete the second occurrence of Peter in (7) altogether:

(12) Peter went to see Bill, but had to return.

English does not generally allow deletion of subjects in simple sentences, but there are many languages which do and where a sentence such as Had to return is quite normal. One such language is Polish. What is interesting here is that (8-9) are translated differently by Polish speakers. Whereas the pronoun is retained in the translation of (8), it is preferably deleted in (9):

(9') Piotr poszedł odwiedzić Jana, ale on był nieobecny.

(10') Piotr poszedł odwiedzić Jana, ale musiał wrócić.

The same holds even if we use a construction with two simple sentences and jednak 'however' instead of ale 'but':

(11) Piotr poszedł odwiedzić Jana. On był jednak nieobecny.

(12) Piotr poszedł odwiedzić Jana. Musiał jednak wrócić.

Remember now that Kuno claimed that 'predictable themes appear in discourses when the same topic continues'. We saw above that this was not generally true, but from the fact that the distinction UNCHANGED TOPIC - CHANGED TOPIC does not coincide with the distinction 'predictable - unpredictable', it does not follow that it is uninteresting. On the contrary, the examples we have quoted here suggest that it is directly relevant. Kuno may be more right than it has seemed for a while from our discussion. If he had chosen the statement that we quoted a few sentences ago as a definition of predictable themes rather than as a claim about them, he might have been right when he said that only predictable themes can be deleted.

We have discussed what happens when a speaker chooses the form of a message in such a way that his addressee can reconstruct the content of the message. What we suggested there can be reformulated as a heuristic conversational principle⁵:

(13) 'The laziness principle':

Omit everything that the addressee can figure out by himself.

I have called (13) 'the laziness principle' to indicate that this is not something that belongs to the conventions of language in the proper sense but rather is a consequence of certain general behavioral tendencies in human beings. One could, however, suggest another principle which is probably of a more conventional nature, although it is quite natural in the sense that it allows for a greater use of the laziness principle:

(14) Indicate only things that have changed and omit those which are as they were before.

If we suppose that language-users generally follow this principle, we could account for the observation that deletion of a topic is (at least sometimes) possible only when 'the same topic continues'. The observation that pronominalization is sometimes obligatory under the same conditions follows less readily from the principle, but with some effort one should be able to formulate a satisfactory explanation. But I leave that to you.

In this paper, I have discussed quite a few concepts that should be distinguished when talking about what is 'old' and 'new'. Let us try to systematize what has been said. We have been discussing a number of dichotomies, more or less closely related to each other. Each dichotomy divides a certain class of phenomena into two subclasses. We thus need to know two things for each dichotomy: what the domain of it is - i.e. what are the phenomena which are divided - and what the criteria for the partitioning are.

We started by discussing PROPOSITIONAL INFORMATION. Here the domain is roughly knowledge or beliefs about the world. The criterion is whether some piece of knowledge is assumed by the speaker to be known by the addressee or not.

Second, we considered at least three possible dichotomies with respect to concepts. The criterion in the first case (Chafe's main distinction) was whether a certain concept is assumed by a speaker to be in the consciousness of the addressee or not. For this we used the terms ON-STAGE and OFF-STAGE. In the second case, we ask if the concept is assumed by the speaker to be known by addressee or not, irrespective of whether he is at present conscious of it. Here, we used the terms KNOWN and UNKNOWN. In the third case, we ask if the concept has already been introduced in the previous discourse (PREVIOUS MENTION).

Third, we considered a number of dichotomies which are perhaps best looked upon as concerning constituents of utterances. To begin with, there was the concept of PREDICTABILITY: whether the referent of a constituent can be predicted by the addressee from the preceding context. Then, we had the concept of RECOVERABILITY: whether the meaning of an utterance is reconstructible if a certain constituent is omitted. To introduce still another term, we could refer to the kind of 'information' involved in these dichotomies as CONTENT-INDICATING INFORMATION. Finally, a dichotomy which was defined for topics or themes but which can probably be used also for certain other categories (such as the TEMPORAL POINT OF REFERENCE of a sentence): whether the referent had changed with respect to the immediately preceding sentence.

Fourth, we mentioned that some people have applied some of the distinctions we discussed in the preceding paragraphs directly to constituents rather than to their referents or interpretations.

Finally, it should be emphasized that we have not tried here to find one 'correct' interpretation of the terms OLD (GIVEN) and NEW. Most of the dichotomies mentioned are relevant in a theory of human language. We do not deny either that the dichotomies are partially overlapping and that their mutual correlations are fairly high. This is also one of the reasons why some people have tended to confuse them. No doubt, one could make even finer distinctions, and I do not think that this paper is free from conceptual confusion.

FOOTNOTES

1) 'Possible to predict' should be understood as meaning 'judged by the speaker to be possible to predict for the addressee'. The use of the verb 'predict' should not be taken as indicating anything about the possibility to predict human behavior in general. Notice, for instance, that the predictability of the subject noun phrase in (3) is founded on the assumption that the second participant in the discourse 'plays the game' and answers the question rather than starts talking about the weather or anything else.

2) The term 'recoverable' has been used in several different ways. In transformational grammar, it usually refers to a purely syntactic concept, whereas we are using it in a more 'pragmatic' sense. Halliday speaks of 'non-recoverable information' as being 'information that the listener is not being expected to derive for himself from the text or the situation' and defines 'new' as 'treated by the speaker as non-recoverable information' (Halliday 1970:163 - although the text mistakenly has 'given' instead of 'new'). It is not quite clear what kind of 'information' Halliday has in mind: the following quotation suggests that he is thinking of both propositional information and what I have referred to at the end of this paper as content-indicating information. He analyzes the sentence

//4 this gazebo//1 can't have been built by Wren//
(in his transcription) where this gazebo and can't are said to be new, as meaning 'I am talking (theme), specifically (new) about this gazebo: the fact is (rheme) that your suggestion (given) that Wren built it is actually (new) quite impossible'.

3) See Kallmeyer et al. (1974, 217) for a similar example where the interpretation of a pronoun is determined by the following context.

4) Recoverability is a necessary, but not a sufficient condition for the use of pronouns. Notice, for instance, that we cannot use he instead of Bill in (5). (I am indebted to Thorstein Fretheim for pointing this out to me.)

5) Grice (ms.) suggests as a possible 'maxim of quantity' the following principle:

'Do not make your contribution more informative than is required.'

This can be taken as another formulation of our laziness principle, but one can also interpret 'informative' as referring to propositional information, and in that case, we get quite another principle. In fact, some of Grice's examples suggest the second interpretation.

ACKNOWLEDGEMENTS

I am indebted to - among others - Jens Allwood, Thorstein Fretheim, Pierre Javanaud, and Jerker Järborg for comments on an earlier version of this paper.

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NOTES ON VALENCY, SEMANTIC SCOPE, AND THEMATIC PERSPECTIVE
AS PARAMETERS OF ADVERBIAL PLACEMENT IN ENGLISH

1.1. The aim of this paper is twofold: to review some problems and define some concepts that I think are relevant to the study of adverbial placement; and to draw attention to the role of thematic structure (functional sentence perspective, topic-comment articulation) as a factor affecting the choice of place for adverbials in English. Many of the problems mentioned here are in need of more thorough investigation.¹

1.2. First, a reminder of some well-known facts. An initial distinction should be made between adverbials that are integrated and marked by continuity of suprasegmental structures, and adverbials that are separated from their immediate environment.² Two of Greenbaum's examples (1969: 183) neatly illustrate the significance of this distinction:

- (1) (a) I want my wife to behave naturally.
(b) I want my wife to behave, naturally.

1.3. In addition to the distinction between continuous and separated placement, many adverbials can occupy more than one place in a sentence. When this happens we must distinguish those moves that cause

¹ Discussions with Erik Andersson over several years have helped me to see more clearly many of the matters discussed in this paper. I am also grateful to Janet Breckenridge, Auli Hakulinen, Fred Karlsson, Viljo Kohonen, Geoffrey Phillips, Håkan Ringbom, and Roger Sell for comments and criticisms, as well as to the participants of the Symposium for a stimulating discussion.

² On intonation patterns, see particularly Hartvigson 1969.

a change in basic meaning and function from those which do not. All those places into which an adverbial can go without changing them are part of the same transportability range. Thus if in the permutations

- (2) (a) Clearly Rupert had signed the will.
 (b) Clearly, Rupert had signed the will.
 (c) Rupert clearly had signed the will.
 (d) Rupert, clearly, had signed the will.
 (e) Rupert had clearly signed the will.
 (f) Rupert had, clearly, signed the will.
 (g) Rupert had signed the will clearly.
 (h) Rupert had signed the will, clearly.

we label the positions as F(ront), M(id)1, M(id)2, and E(nd), respectively, and indicate continuous placing with C and separated placing with S, a table can be drawn up to illustrate transportability ranges of two unfocussed structures:

Transportability Range of	P o s i t i o n (unfocussed only)			
	F	M1	M2	E
<u>clearly</u> as a sentence adv.	C, S	C, S	C, S	S
<u>clearly</u> as a manner adv.	-	-	C	C

1.4. There are, however, problems in the determination of transportability ranges. First there is the need to establish the extent to which meaning and acceptability are affected by the distinction between continuous and separate placing. Four patterns are possible:

- (a) an adverbial may be equally acceptable and have the same meaning both when C and when S, as in (2a-b);
 (b) C placement is more acceptable than S placement, as in (2c-d);
 (c) S placement is more acceptable than C placement, which suggests parenthetical insertion of the adverbial, as in He had gone, in Paris, to the Louvre as opposed to He had gone in Paris to ...
 (d) C and S placement are equally acceptable but mean different things, as in (1a-b).

Acceptabilities are further complicated by focal emphasis, and yet another problem is caused by preferential interpretations. Compare

- (3) (a) Jane had obviously played the piano.
 (b) Jane had honestly reported our story.

In (3a), obviously is most likely to be a sentence adverbial; in (3b), honestly is most likely to be an adverbial of manner, in spite of the fact that both obviously and honestly can function both as sentence adverbials and as adverbials of manner. The difference in interpretation seems to reflect plausibilities in the universe of discourse, and not merely a difference between the adverbials as such. It is rare for anybody to play the piano in an obvious manner, but common to report things honestly (or dishonestly, as the case may be). Compare (3a) with

- (3) (c) Jane had obviously hinted her intention of marrying Lord Hurst.

where obviously is more readily interpretable as an adverbial of manner. In

- (3) (d) Jane obviously and loudly played the piano.

the syntactic parallel with loudly supports the interpretation of obviously as an adverbial of manner. Such instances, then, pose a caveat: different adverbials may carry different preferential interpretations, which may vary not only according to place but also according to syntactic features elsewhere in the sentence (as in 3d) and with pragmatic factors (as in 3a,b and c).

1.5. Given these variables, part of the problem is to find out to what extent the choice of place within the transportability range is affected by different forces, thematic perspective among them. Should thematic considerations prove relevant, a number of corollaries follow. As text linguists have learned to emphasize, thematic structure serves to arrange the flow of information through the text in the manner required by text strategy. Some of the forces guiding adverbial placement must thus be sought, not within the sentence but outside it, in text strategies and patterns of intersentential cohesion. Therefore taxonomic statistics on adverbial placement should be followed up by context analyses. Only by observing context, including situation, can we get at those principles of textual cohesion that motivate the placing of certain adverbials in one slot rather than in another.

1.6. In this paper I shall not discuss those adverbs and adverbials that have restricted modificatory scope in that they modify adjectives (as intensifiers or downtoners), adverbs, prepositions or prepositional phrases, determiners, or noun phrases (in other words, those adverbials dealt with by Quirk et al. 1972 on pp. 275-283). The reason why these adverbials will be ignored is that they do not play those more varied thematic roles that are reflected in word order and which interest us here.

2.1. Traditionally, semantic categories or, perhaps, 'quasi-semantic' ones have been regarded as the chief determinants of adverbial placement. Thus elementary grammars often contain statements of the type "adverbs of manner go after the direct object, or after the verb if there is no direct object" or "adverbs of frequency go into auxiliary position". Such statements are too familiar to need further comment here.

2.2. A major factor affecting the placing of adverbials is the valency of the adverbial for a given verb, that is, the degree of tightness of the bonds between the verb and the adverbials within the verb phrase. The tightest valency bonds exist between those verb-adverbial combinations that resemble phrasal verbs in that the adverbial is essential for the well-formedness of the sentence. Thus a verb such as put requires an adverbial of place unless it already has a phrasally-attached adverb:

- (4) (a) ^xPut the hat.
 (b) Put the hat on.
 (c) Put the hat down.
 (d) Put the hat on the table.

Such adverbials can be called valency adverbials. They can be treated as part of the semantic specification of the verb: for certain verbs of movement, valency adverbials are adverbials of place; for verbs of duration, adverbials of time; and so forth.

2.3. The definition of valency adverbials is, however, complicated by the fact that several semantic types of adverbials can be very closely linked to some verbs:

(5) Susie dresses. Susie dresses in the bathroom. Susie dresses for dinner. Susie dresses elegantly.

(6) [?] I know you have lived for a year. I know you have lived happily (for a year). I know you have lived in Paris (for a year).

Dress without an adverbial contrasts with 'going naked' and is best acceptable in contexts such as

(7) (a) Susie has given up nudism. Now she dresses.

It might also mean 'dresses well', as in

(7) (b) Susie used to go in dirty jeans. Now she dresses.

In the sense of 'wear one's clothes' or 'put on one's clothes', however, dress usually requires an adverbial of manner or of place (a 'rhematic minimum' one might call it). Similarly, without an adverbial of manner, time or place, to live acquires a rarer sense paraphrasable as 'lived intensively', 'lived it up'. Thus there are verbs whose meaning changes when an adverbial is removed; this in itself indicates tight valency bonds between the verb and the adverbial.

2.4. Adverbials of setting would be a suitably descriptive term for those adverbials of time and place that do not describe features essential to the action itself, or features necessarily implied by the verb, but which indicate the place-and-time-bound setting in which the action takes place. To adapt Tesnière's suggestive terms, actants and circonstants, one might suggest that in a theatre, adverbials of setting would be depicted on the backdrop or with the aid of stage props, whereas valency adverbials and adverbials of manner would be more likely to be presented through the action itself. Thus in

(8) Three years ago at Bellagio I swam two hundred yards at great speed thrice a day in Lake Como.

three years ago, at Bellagio and in Lake Como specify the setting, whereas two hundred yards (if defined as an adverbial), at great speed and thrice a day specify the action itself. We can thus attempt a distinction between adverbials giving the background information that could apply to more than

one specific activity (adverbials of setting), and adverbials that specify essentials of the activity at hand (valency adverbials). The latter could even be specified as part of verb patterns or through strict sub-categorization rules in a lexicon. Between the extremes, however, there may be a cline, reflecting degrees of firmness in valency bonds.

2.5. The distinction between adverbials of valency and of setting is functional rather than part of the lexical specification of the adverbial. That is to say, the same adverbial of time or of place can function both as an adverbial of valency and as an adverbial of setting. The scale between tight valency and loose setting can be illustrated with examples such as

- (9) (a) ?For three years, Susie lived in Paris.
 (b) ?In Paris, Susie lived for three years.
 (10) (a) Susie made a special point of reading Molière in Paris.
 (b) In Paris, Susie made a special point of reading Molière.

In (9), valency bonds are tight; in (10), in Paris is an adverbial of setting. This helps to explain why (9b) seems, if not questionable at least much more strongly marked than (10b). Valency adverbials are harder to topicalize: they are close to the verb, deeper down in the structure, and more difficult to extract.

2.6. In addition to providing us with a useful functional distinction that cuts across traditional semantic classifications, the difference between adverbials of valency and adverbials of setting thus yields clues for syntactic hierarchization. Adverbials with the tightest valency bonds are most tightly secured to their verbs: they go next to the verb and deepest down into the tree. Adverbials of setting go higher up. (Whether we place them in higher VP nodes, directly under the S node, or in a performative depends on our choice of model, and will not be discussed here.) Such principles of hierarchization agree with the principle that depth of embedding correlates inversely with ease of movement, particularly topicalization: the deeper the embedding, the more difficult the constituent is to move, and vice versa. Compare the topicalizations

- (11) (a) *On a bench he sat down in Hyde Park.

- (b) ?In Paris John lived. (Possible only if lived means 'lived intensely'.)
 (c) In Paris John worked on his novel.

3.1. Valency leads us directly to semantic scope, which can also be viewed in terms of inclusiveness relations. With the aid of scope we can explain the difference between, say,

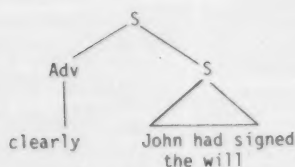
- (12) (a) Clearly John had signed the will.
 (b) John had signed the will clearly.

The closer bonds between signed and clearly in (12b) than in (12a) can be illustrated with the aid of brackets:

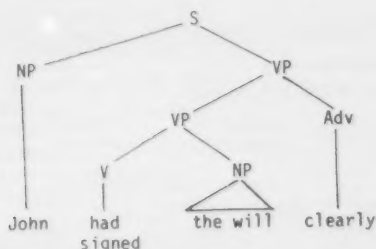
- (13) (a) ((Clearly) (John had signed the will))
 (b) ((John) (((had signed) (the will)) (clearly))))

or with the corresponding trees

(13a)



(13b)

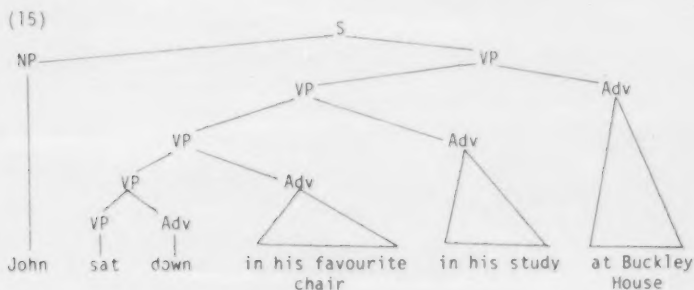


3.2. There are various kinds of evidence that we can use when trying to draw bracket formulae or tree diagrams to indicate the scope and node attachment of adverbials. As we have already seen, valency bonds can be tested with omission tests (adverbials that cannot be deleted without destroying the well-formedness of the sentence are very closely bound to their verbs) and movement tests (valency adverbials are harder to topicalize). In instances such as (12), paraphrasability gives us another criterion: in (12a), clearly is paraphrasable as a subordinate sentence 'it is clear that S', whereas in (12b) it paraphrases as something like 'in a clear and legible manner'.

3.3. Manipulation of sequences of several adverbials also helps us to find criteria for hierarchization. If by homosemantic adverbials we mean two or more adverbials, usually of time or place, semantically homogeneous enough to provide for unambiguous inclusiveness relations, the order of adverbials in a homosemantic sequence is obviously affected by our knowledge of the structure of the physical world. In a sentence such as

- (14) John sat down in his favourite chair in his study at Buckley House.

there is a 'natural' order based on the physical fact that the chair is in the study and the study in the house. Erik Andersson has argued at length (Andersson 1974) that the placement of the most inclusive, hierarchically highest adverbial furthest to the right follows from its attachment to the highest node in trees like



A similar argument could be applied to sequences of homosemantic time adverbials, as in

- (16) John swam at twelve noon every day during his vacation last summer.

Let us also note at once that in a homosemantic sequence, neighbouring adverbials can switch places more readily than more distant ones. Thus

- (17) John swam every day at twelve noon last summer during his vacation.

is a better permutation of (16) than

- (18) ^xJohn swam last summer every day during his vacation at twelve noon.¹

Thus in a homosemantic sequence, our possibilities of permuting the adverbials are to some extent² constrained by 'natural' scope which reflects inclusiveness relations in the physical world. This is related to, but not the same thing as, valency, which was a measure of the closeness of the bonds between the verb and its adverbials.

3.4. Permutations of some more heterosemantic sequences involving adverbials also deserve attention. For instance, a sequence of three elements: a setting-adverbial of place, a setting-adverbial of time, and a subject-verb-phrase nexus can permute as follows:

- (19) (a) (In London (three bombs exploded (last night)))
 (b) (In London (last night (three bombs exploded)))
 (c) (Last night (three bombs exploded (in London)))
 (d) (Last night (in London (three bombs exploded)))
 (e) (Three bombs exploded (in London (last night)))
 (f) (Three bombs exploded (last night (in London)))

All six permutations are well formed, and none of the shifts affects the basic meaning of either adverbial. But (19a-b) begin by telling us that the sentence is concerned with what happened in London, (c-d) start out by stating their concern with what happened last night, and (e-f) begin by telling us about the explosion, specifying time and place later. And (a) and (e) imply that last night is the most 'important new information,

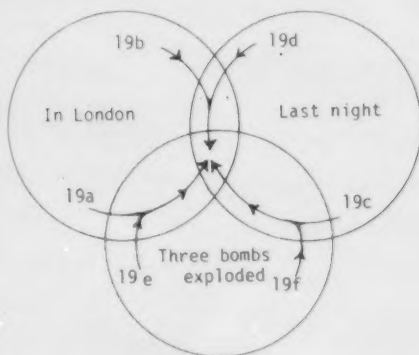
¹ We should, however, not exclude the possibility that interpretation is not only a matter of order but also of grouping. Thus in (17), every day at noon can function as a single adverbial (it can be topicalized as such); in (18), however, during his vacation at twelve noon would be a semantically absurd grouping.

² Only, however, to some extent. The arrangement of some homosemantic sequences can vary. Compare When did the ship arrive? Yesterday at seven./At seven yesterday.; Where did you eat? In London at the airport./In the French restaurant in King's Road. Different orders would be used in different contexts: they reflect thematic perspective of the kind discussed below in sections 3.5-6. One plausible hypothesis would be that departures from 'natural' semantic scope are thematically marked.

(b) and (d) that the news is the explosion, and (c) and (f) that the event took place in London. These arrangements no longer reflect relations in the physical world. They reflect thematic perspective: the speaker's or writer's way of looking at events, organizing his message and joining it to the surrounding context or situation.

3.5. "Elements," said Dwight Bolinger (1952) about this very phenomenon, "as they are added one by one to form a sentence, progressively limit the semantic range of all that has preceded. This causes beginning elements to have a wider semantic range than elements toward the end." Information theorists argue that all interchange of information consists of the successive elimination of alternatives and thus of the progressive removal of uncertainties. In many natural languages, thematic mechanisms involving linear order are a major means of controlling the order in which alternatives are eliminated and uncertainties removed when the receiver hears or sees the linear sequence of symbols. The progressive elimination of alternatives should perhaps be illustrated with a simple device. One might regard sentences such as those under (19) as intersections of three simpler underlying propositions, and draw a diagram in which the sentences appear as arrows starting from one proposition and moving into the intersection area:

(20).



3.6. Let us now take yet another heterosemantic sequence, for instance the one by which Quirk et al. exemplify the principle that the basic order of a sentence-final sequence of adverbials is process - place - time (1974 : 506-7):

- (21) (a) He was working with his shears in the garden the whole morning.

All the same this sentence can be permuted without such grave consequences as followed upon the permutation of the homosemantic sequence in (18):

- (21) (b) He was working with his shears the whole morning in the garden.
 (c) the whole morning with his shears in the garden.
 (d) in the garden with his shears.
 (e) in the garden with his shears the whole morning.
 (f) the whole morning with his shears.

We may, if we like, draw hierarchic trees such as that in (15) for each one of these permutations. But the hierarchies will no longer reflect temporal and spatial inclusiveness relations as they exist in the physical world (chairs are in rooms, rooms in houses; houses are not in chairs, etc.). Instead, the realm of thematic perspective is involved. What is reflected is the speaker's or writer's efforts to adjust the linear progression of the sentence to the text-strategic principles guiding the flow of information through the text. Part of the task of text strategy is to link the sentence to its environment, to provide its beginning and end with plugs, as it were, which can be plugged into the preceding and the following sentences. And part is to arrange the linear sequence to coincide as closely as possible with the principles of 'communicative dynamism', to speak with Firbas. This principle has to do with the ordering of information. It usually requires elements with greater communicative importance and a high content of new information to go into or towards the end of the sentence (unless the speaker or writer opts for the opposite policy for an emphatic or stylistic effect, or is compelled to ignore it because of some other constraint).

3.7. In homosemantic adverbial sequences, then, the order is to some extent constrained by realities of the physical world. More hetero-

semantic sequences are freer to reflect text strategy and communicative dynamism, and thus thematic perspective.¹ Sequences of heterosemantic adverbials are also more sensitive to the principle of end weight -- weighty constituents go last -- than sequences of homosemantic adverbials. Compare

- (22) (a) John sat down in his favourite carved-oak chair with dragon arm-rests in his study at Buckley House.
 (b) John sat down in his study at Buckley House in his favourite carved-oak chair with dragon arm rests.
 (c) John was working with his shears in the greenhouse of his enormous and recently modernized garden the whole morning.

Both permutations of (22a-b) seem acceptable, apparently because (22a) which breaks against the principle of end weight is still justified by the principle of natural homosemantic scope, and (22b) which breaks against the principle of homosemantic scope is justified by the principle of end weight. Sentence (22c), however, breaks the principle of end weight without any justification in natural scope, and therefore seems more awkward. Actually the principle of end weight can be viewed as part of the principle of thematic perspective. A common thematic strategy rules that elements with important new information usually go last. And one may argue that a weighty constituent is weighty precisely because it contains a great deal of new information. However, end weight in itself - as manifested by length and complexity of a constituent - is a formal and objective enough criterion to be amenable to fairly firm syntactic rules, and not only to thematic preference. Therefore syntactic patterns may override thematic perspective: weighty final constituents may be allowed to contain old information as well.

¹ Compare for instance the easy permutability of *Susie came at seven every morning / every morning at seven* with the more restricted permutability of *Susie sat on the sofa in the living-room / in the living-room on the sofa*. This suggests that *sit* has closer ties with *on the sofa* than with *in the living-room*, whereas *came* does not similarly rank its two adverbials. An emphasis on new information in the adverbial (on a sofa instead of the sofa) may also increase the importance of thematic considerations in comparison with inclusiveness and valency relations, and motivate the order ... in the living-room on a sofa.

3.8. To sum up so far. We have seen that semantic categories are a basic factor to reckon with in adverbial placement. They provide the fundamental criteria for the determination of transportability ranges for major adverbial categories. But transportability ranges in individual sentences are also affected by syntactic factors elsewhere in the sentence as well as by pragmatic factors. Once the transportability range is given, the choice of a place from within is governed by considerations involving valency, semantic scope, and thematic perspective (including focus and other distinctions between old and new information, end weight, 'emphasis', and 'theme dynamics' in the sense explained below under 4.4.). The interplay and resultant of all these forces becomes one of the determinants of the syntactic form, and thus of the word order, of the sentence.

4.1. In discussions of choices of place from within a transportability range, a question that needs to be asked is to what extent the placing of an adverbial results from an active wish to have a particular adverbial in a particular place. A study of sentences in context in fact suggests that some adverbials are placed where they are, not so much because they ought to go there as because they have to be moved out of the way of another constituent with greater priorities.

4.2. An example from the Scottish tourist calendar beside my desk:

- (23) Loch Broom is a fine sea-inlet near Ullapool in the district of Ross and Cromarty ... its waters are clear blue and its banks are carpeted with wild hyacinth and pink sea-thrift. Clusters of stark pine trees line the shores, and as far as the eye can see stretch grassy slopes and thick forests, sometimes roamed by graceful deer.

As far as the eye can see has been topicalized,¹ apparently not so much because it needs preposing in its own right for semantic or other reasons,

¹ In view of the motley terminology and the many different interpretations of the terms theme, rheme, topic, comment, and focus (cf. Dahl 1974), I owe my readers a summary note of the manner in which I have come to define these terms. I do not here use theme and topic, or rheme and comment, as synonyms. By topic I mean a constituent which (a) occurs at the very beginning of the clause, being preceded only by connectives and conjunctions; and which simultaneously (b) can be regarded as having been moved

as because of a desire to give the attractive and effective phrases grassy slopes, thick forests and graceful deer priorities for final rhematic position. Graceful deer is indeed rhematized through passivization. The passage would obviously lose in stylistic appeal and flavour were it rearranged into a less marked order such as

- (24) ... Clusters of stark pine trees line the shores, and slopes and thick forests, in which graceful deer sometimes roam, stretch as far as the eye can see.

In such instances we may speak about indirect motivation in adverbial placement. This of course follows from the fact that the ordering of a sentence only permits a limited number of options, of 'degrees of freedom'. Inevitably, the placing of one constituent in a certain thematic position will restrict the liberties of movement of other constituents.

up front from some other, less marked, position, and (c) does not tolerate any other fronted constituent next to itself (i.e., a clause can have only one topic). A comment is, correspondingly, a clause-final constituent similarly moved into clause-final position. A theme, on the contrary, is (if we define it positionally) the first part of the clause up to, and sometimes including, the verb (cf. Sgall et al. 1973). The theme may consist of a number of subthemes: thematic adverbials (or adverbial themes), noun phrases, etc.; if there is a topic (that is, if the front-most constituent is the result of topicalization, meaning the kind of fronting movement specified above), the topic is part of the theme. Topicalizations and commentizations merely move constituents about, without changing syntactic relations. Thematizations and rhematizations (that is, the operations leading to choice of theme and of rheme, respectively) may on the contrary change syntactic relations: they include choice of subject (including passivization), subject and object raising, extraposition, tough movement, and other comparable operations. Focus is marked by special prominence through stress, intonation and paralinguistic devices; by clefts; or by both clefts and special prominence. As to functions: the theme-rheme and topic-comment systems adjust thematic perspectives, help to connect the sentence with its textual and situational environment, and serve text strategy. The theme is usually 'what the sentence is about' and often contains old ('contextually bound') information. The rheme often contains new information, with the most important new element in final or comment position. Focus mechanisms also mark new information, or correct information that has been wrongly received (focussed form-words such as articles or prepositions usually indicate corrections, a focussed verb or focus-carrier do indicates assertiveness or insistence). Such markings are indicated particularly when there is new information in a part of the sentence (the theme or front part of the rheme) which is usually reserved for old information. That kind of emotive emphasis which gives special prominence to individual constituents or sentence elements also comes under focus.

This is a phenomenon general enough to allow for practically unlimited illustration. I shall quote yet another example, this time from The Times Literary Supplement:

- (25) Anyone who asks why the status of women was at no time and no place in ancient history lower than it was during the fifth century B.C. in Athens, supposedly the most advanced city of that age, will do so more profitably in the context of a general study of woman's position in antiquity; and it is so with many other problems.

Here, at no time ... history has been inserted between was and lower, apparently because the even longer and heavier adverbial, during ... age, has a higher priority for end position, and placing the two heavy adverbials next to each other would be awkward:

- (26) Anyone who asks why the status of women was lower than at any time and place in ancient history during the fifth century ...

What such examples show is that a mere taxonomy on what semantic categories of adverbials appear in a given slot does not give us the whole picture. Sometimes adverbials are forced into a certain place -- even an unusual and perhaps undesirable one -- because they are crowded out of more basic positions. A rare or awkward placing of an adverbial may turn out to be the least of the evils among which a speaker or writer must choose. This suggests that adverbial placement cannot be adequately studied without simultaneous analyses of the placing of other constituents, at least those that may have jostled adverbials from their potential places.

4.3. Nor should we rule out the possibility that different places in the sentence may be characterized by different degrees of determinacy and indeterminacy. Rhetoricians and grammarians have noted for centuries (see Scaglione 1972) that the front and end positions are places of special importance. Theories of thematic perspective, including Jan Firbas's views on Communicative Dynamism, partly help us to understand why: the front, topic position helps to connect the sentence with the previous discourse and introduces the theme, whereas the final, comment or rhematic end position often coincides with a maximum of communicative dynamism and marks important new information. In comparison, mid positions are thematically more neutral. In instances such as (27), we might even speak of a

relative indeterminacy of place, as the switch of often and been does not seem to correlate with any obvious semantic or thematic principle:

- (27) (a) Susan has often been seen reading Shakespeare.
(b) Susan has been often seen reading Shakespeare.

In such instances, however, principles other than semantics and thematics may motivate the preference of one structure over another. We should for instance bear in mind that rhythm and assonance, prosody and metrics may affect word order, including adverbial placement: in metrically regular poetry, the requirements of meter may indeed become more important than ordinary grammatical acceptability, and deviant word-order patterns may be accepted. In some kinds of communication, such iconic cohesion also rules the placement of adverbials, as in the following quotation from Time:

- (28) Before each game, New York Jets Quarterback Joe Namath finds a quiet spot and seems to nod off. In the middle of a gale on Long Island Sound, while her friends are wrestling with lines and sails, Wendy Sherman, a Manhattan adwoman, slips to the bow of a 36-ft. yawl, makes herself as comfortable as she can, and closes her eyes. On warm afternoons in Rome, Ga., Municipal Court Judge Cary Hamilton and his wife Virginia can be found on their screened porch, apparently dozing ...

The syntactic homomorphism here consists of the sequence of adverbials in front position. The iconicism (each sentence being a 'picture' of each other sentence at a certain level of description) helps to hold the text together: it becomes a cohesion device.

4.4. Related to iconic cohesion is that fundamental factor of text strategy which I have elsewhere (Enkvist 1974) called theme dynamics: are the important co-referential or cross-referential links between the sentences of the text between the theme of one sentence, and the theme or rheme of the next sentence? or between the rheme of one sentence and the theme or rheme of the next? What, in general, are the dominant patterns of intersentential linkage in these terms, or in the somewhat more elaborate ones suggested by František Daneš (Daneš 1971)? These strategic options, which guide the thematic perspectives of individual sentences, can be briefly illustrated with the aid of a few deliberately simplified examples:

- (29) (a) John went often to night-clubs. He went rarely to church.
 (b) John went to the night-club yesterday. He went to church this morning.
 (c) John went often to night-clubs. To church he went rarely.
 (d) John went to the night-club yesterday. This morning he went to church.

In (29a) the two sentences have a repeated thematic pattern with links between initial John and he, medial often and rarely, and final to night-clubs and to church. In (c) and (d), on the contrary, there are links between the rhematic to night-clubs or yesterday, and the thematic to church and this morning, respectively. Thus adverbials too, and not only noun phrases, may contribute to the realization of text strategies through theme dynamics.

5.1. Of the two major types of models -- the taxonomic slot-and-filler model, which defines the different possible slots into which adverbials can go, and lists the adverbials that go into each slot; and the transformational model -- the transformational model has certain advantages. One of them which is particularly relevant to the present essay is its potential explicitness as to parameters and movement transformations, especially in instances where it is possible to distinguish positions by degrees of markedness. Each parameter can be seen as a moving force; the interaction between parameters can be modelled as a summation of such forces, some of which reinforce each other and some of which counteract each other's effects; and the resultant releases or constrains certain placements which can be defined in terms of movement transformations. One of the difficulties that all models must somehow resolve is the complex neutralization of certain slots in certain types of sentences. Thus John should have been sleeping. is a sentence with four mid-position slots, whereas John slept. only has one. As many treatments show, this complicates the description.¹

¹ Thus Jakobson (1964) operates with three front, eight mid and five end positions as well as further modifications for certain sentence types such as imperatives; Hartvigson (1969) has a system with 13 positions; Quirk et al. (1972) make special statements about neutralization (p.426); and Donner (1951) has a number of complex charts for different sentence types.

5.2. In transformational models of adverbial movement, the problem is how to limit the number and range of movement transformations. Some constraints concern individual adverbs (hard, fast, well, completely, totally, etc.), but others are more obviously matters of grammar rather than of lexical specification. If we make an initial distinction between extranodal movement transformations, which move an adverbial out of its original node, and intranodal movement transformations, which move the adverbial within its node and permute sister constituents only, we can note that extranodal movements will require a precise specification of the receiving slot. Such specification is easy in the case of two extranodal transformations, namely topicalization and commentization, which move elements into the very beginning (conjunctions and connectives excepted) or very end of the clause, respectively. Here the addresses are clear and unequivocal, and the transformation can be specified in terms of essential variables (which helps to explain why topicalization and commentization can take place just once, and why a sentence can have only one topic and one comment).¹ With other extranodal transformations, however, the specification of the receiving slot becomes complicated. The simplest kind of intranodal transformation allows placement of the adverbial into any slot under the node and thus allows free permutation of sister constituents (see further Keyser 1968 and Jacobson 1970). Finally there is parenthetical insertion, where the adverbial is marked by separation (see examples under (2)); parenthetical insertion too obeys certain island restrictions in not being allowed to split up certain constituents.

5.3. Sometimes, however, there are situations in which none of these movement patterns suffice to explain what goes on. In instances such as

- (30) (a) Obviously Rupert has }
 (b) Rupert obviously has } been there several times.
 (c) Rupert has obviously }

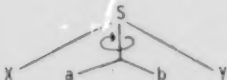
¹ I owe this observation to Janet Breckenridge.

- (31) (a) She {had presumably} not {often been} playing the sonata.
 (b) She {presumably had} not {been often} playing the sonata.

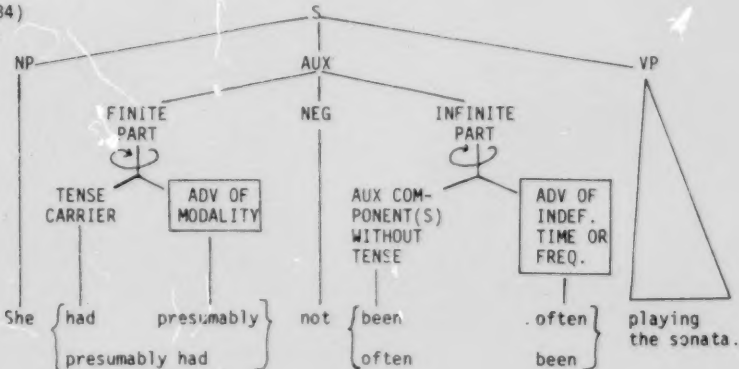
(30a) can be explained as a topicalization of obviously (if it has been introduced into some other basic position), or alternatively as the basic position of obviously. But (30b) and (30c) as well as (31a) and (31b) are instances where neighbouring elements switch places, in a pattern symbolizable as

- (32) $X \begin{Bmatrix} ab \\ ba \end{Bmatrix} Y$

If the constituents that switch places could be joined under the same node, the switch could be modelled as node rotation:

- (33)
- 

This tree produces the strings XabY and XbaY. By inserting several rotating nodes into a tree, and by suitable node assignment to elements or groups of elements in the string, a rotating model can generate a larger number of structures. We can now try to devise a node structure whose rotation would produce variants such as (30b-c) and (31a-b). For instance,

- (34)
- 

The principle of rotation could be extended to explain the movement of adverbials of manner around the rest of the verb phrase, and the movement of adverbials of setting around the entire sentence. But the rotation model also raises a host of problems, not least because it obviously operates close to the surface and joins elements from different origins under the same rotating node (thus in (34), the auxiliary has to be split up into two components to admit intervening adverbials). Also it must be surrounded with a number of constraints, for example to cover instances where adverbials change their meaning when rotated (cf. Quirk et al. 1972: 451).

5.4. Yet another type of model that deserves mention as potentially useful in the explication of adverbial movement is that based on permutation operators. In the form used by Saumjan (1973: 119ff.), the general principle is to introduce operators such as M and M^X which cause permutations in the order of operands, for instance

$$\begin{aligned} (35) \quad yw &\rightarrow M(wy) \\ xyw &\rightarrow M^X(xwy) \end{aligned}$$

Ordered sequences of the operators and suitable groupings of operands can produce a variety of permutations.

6.1. In this crowded paper, some major parameters affecting adverbial placement have emerged: semantic categories, valency, semantic scope, and thematic perspective (including the treatment of old and new information, weight, focus and 'emphasis', and text strategy). In some texts, iconic considerations also play an important role. In a wider perspective, the placing of adverbials can be seen as a result of an interplay between these various parameters. For those adverbials which have a basic unmarked position, this interplay can be reduced to dualistic terms. There is a moving force consisting of the summation of those forces that prompt marked placing and movement out of the neutral, least marked position. The movements can be modelled in terms such as topicalization, commentization, parenthetic insertion, extranodal movement, intranodal movement, and rotation. But opposing the moving force there is a resistance consisting

of all those forces whose inertia opposes the movement. There are principles (for instance the avoidance of old information in rhematic or comment position, the principle of end weight, aspects of theme dynamics, metrical and stylistic preferences, and the like) which may both prompt movements and constrain them, depending on whether they favour or oppose moving a particular adverbial in a particular sentence in a particular context and situation. The effect of such forces may also sometimes be indirect in that adverbials must be moved out of the way, as it were, of other constituents with more important claims. Whatever the force, however, every instance of marked placement shows that the moving force has proved superior to the resistance. This, at least in theory, gives us a chance of studying relations between different forces by trying to match them against one another.

6.2. Such a dualistic view -- which seems to agree nicely with the theories expounded by Ross (e.g. 1973) and Lakoff (e.g. 1975) -- also leads us to consider whether, as Lakoff suggests, adverbial placement too is a phenomenon where we may find "hierarchies which are largely constant from speaker to speaker," but where different speakers -- and, one is tempted to add, different styles, -- "will have different acceptability thresholds among these hierarchies" (Lakoff 1974 : 271). An intensive investigation of such matters requires analyses of large corpora of text and of acceptabilities in context, stylistic tolerance levels, and the like. And the studies must not be preoccupied with one sentence at a time, but must be consistently geared to the analysis of text strategies. At the present stage of research a massive project along such lines would not be lacking in utopian ingredients. But should the present essay have stimulated its hearers or readers to look into aspects of valency, scope, and thematic perspective as influences on adverbial placement, it has not been offered in vain.

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ON CERTAIN CONFLICTS BETWEEN FOCUS-DETERMINED
AND CLAUSE-TYPE-DETERMINED WORD ORDER

O. When this paper was read at the symposium in Abo, it had a different title. I have replaced the term 'scope-determined word order' of the first draft by 'focus-determined word order', for reasons having to do with certain points coming up during the discussion following its presentation.

I originally believed that focal stress¹ on a particular constituent in a sentence with an adverbial operator will invariably restrict the logical scope of the adverb, and that the marked word order which is the result of uniting the adverb and its scope syntactically is due to an optional transformational rule with no semantic consequences. This view is unfortunate, for whereas (1)a. and b mean the same, (2)a. and b. do not.

(1)a. He did not visit us in SEPTEMBER but in AUGUST.

b. He visited us not in SEPTEMBER but in AUGUST.

(2)a. He did not go to bed many HOURS ago.

b. He went to bed not many HOURS ago.

(2a) is semantically closer to the sentences of (1) than (2b) is. The two conjuncts September and August were contrasted in (1). In (3) there is a contrast of the same type between many hours ago and ten minutes ago, but (4), a continuation of (2b), sounds contradictory.

(3) He did not go to bed many HOURS ago. He went to bed TEN MINUTES AGO.

(4) He went to bed not many HOURS ago. ?He went to bed TEN MINUTES ago.²

One has the right to infer from (2b) that the subject referent went to bed at least more than one hour ago.

For surface structures like (1a) and (2a) I will introduce the term of 'clause-type-determined word order'. The position of the negative adverb not is conditioned by general unmarked word order rules applying to adverbial operators in English. The clause-type-determined position of not is immediately after the present or past tense form of the auxiliary verb do or some other auxiliary. For other adverbial operators the most frequent position is right after a finite auxiliary and right

before a finite lexical verb. Aux being a squishy category, either order appears to be considered normal with some auxiliaries.

Earlier I contrasted clause-type-determined order with what I called scope-determined order. Thus the position of not would be scope-determined both in (1b) and (2b). Unfortunately it is not altogether clear what it means to say that the phrase many hours ago is the scope of not in (2a) as well as in (2b). Evidence from tag questions has been used to support the distinction between sentence negation and constituent negation first made by Klima (1964). The positive tag of (5) shows that (2a) is a negative statement.

(5) He did not go to bed many HOURS ago, did he?

A tag question appended to (2b) calls for the negative form didn't he, which supposedly means that (2b) is not a negative statement.

(6) He went to bed not many HOURS ago, didn't he?

However, Østen Dahl pointed out in Abo that the so-called sentence negation of (7) and constituent negation of (8) must both be followed by a positive tag.

(7) He wasn't in Oslo in September, /was he?/.

(8) He was not in OSLO in September, /{⁺was he?
wasn't he?}/

(7) and (8) have the same linear order of morphemes, but the negative adverb of (8) happens to be immediately to the left of the focus constituent, and in (7) neither Oslo nor September is focally stressed. We can easily imagine (7) pronounced with relatively more stress on the finite verb than on any other sentence element. The form of the tag cannot be appealed to if we are trying to justify the position that there is one kind of negation in (7) and a different kind in (8).

Today I prefer to say that adverbial operators in English may be adjoined to the left of the sentence focus by an optional rule of the following sort. (Focal stress is a prerequisite for restricted scope interpretations anyway.)

(9) ~~Adv~~, Adv, X, $\bar{Y}$, Z $\Rightarrow$

1 2 3 4 5

1 Ø 3 2+4 5

where 4 is a constituent which bears focal stress.³

One problem remains. If we say that the phrase many hours is the sentence focus both in (2a) and in (2b), we still have to explain why (1a) and (1b) could be related by means of a transformation, namely (9),

which is meaning-reserving, while the same transformation would not be meaning-preserving in the superficially similar case of (2a) and (2b). Many hours ago is a quantified phrase. There are severe restrictions on the application of (9) to the negative morpheme not, but when not precedes a quantifier word (e.g. many), a pseudo-quantified phrase (e.g. long ago), or another adverbial operator with a freer distribution than not (e.g. only or even), those restrictions are not operative. Not opens the surface structure of (10), but the focus of the sentence is the final word guacamole. The initial position of not is conditioned by the quantified subject phrase, which does not have to carry much stress.

(10) Not everyone was eating GUACAMOLE.

Here clause-type-determined placement of not yields a sentence which it may be harder to interpret correctly, at least when pronounced with the stress pattern most closely resembling that of (10).

(11) Everyone was not eating GUACAMOLE.

Now contrast (10)-(11) with the focus-determined word orders of (12) and the two identical clause-type-determined strings of (13).

(12)a. ⁺Not PAULA was eating guacamole.

b. ⁺Paula was eating not GUACAMOLE.

(13)a. PAULA wasn't eating guacamole.

b. Paula wasn't eating GUACAMOLE.

The word order of (10) is not focus-determined in our sense. Nor is it clause-type-determined. I would suggest that this also applies to (2a). Notice that the phrase not many hours ago of that sentence can be thematized, and that it does not have the formal properties of a sentence focus in (14), where the nuclear stress is on the word bed.

(14)a. Not many hours ago he went to BED.

b. He went to BED not many hours ago.

1.1. Having dismissed the idea that rule (9) enters into the syntactic derivation of (2a) and (10), we find that there are very few cases left for (9) to apply to when term 2 of its SD is the negator not. It looks as if we need something like the conjunction of (1) in order to apply this rule correctly in English. Elsewhere I have referred to that type of but-conjunction as 'exclusive' (Fretheim 1974, 1975).

Sentences with conjoined contrasted foci are like cleft sentences in that they have a uniqueness presupposition. "He visited us in SEPTEMBER" is inconsistent with "He visited us in AUGUST". We can make

a semantically acceptable sentence by negating one of the statements, as evidenced by the well-formed structure of (1), and some of the impossible positions for not in non-coordinate structures tend to be accepted in the coordinate ones.

(15) Not PAULA but PHYLLIS was eating guacamole.

(16) Paula was eating not GUACAMOLE but MOLE VERDE.

The transformation of (9) is almost obligatory when the exclusive conjunction serves as subject of the sentence, as in (15). (15') with clause-type-determined word order would hardly be considered semantically and pragmatically equivalent to (15) by many speakers. The conjunction of (15') is not exclusive.

(15') PAULA was not, but PHYLLIS was eating guacamole.

If we want a conjunction of contrasted phrases to be understood in the exclusive way, we should see to it that there is no intervening stuff between the conjoined phrases. I will return to a more detailed account of this important "iconic" principle of syntax below when discussing the word order of Norwegian sentences expressing exclusive conjunction.

1.2. The locative phrase in Oslo of (8) was the focus of that sentence, but there is no reason to believe that (8) had undergone the movement rule of (9). Not is where the clause-type-determined word order principle says that it should be in sentence (8), but not in (17) or (18).

(8) He was not in OSLO in September.

(17) *Not HE was in Oslo in September.

(18) *He was in Oslo not in SEPTEMBER.

(17) and (18) have to be replaced by some such syntactic circumlocation as the cleft sentence construction.

(8) is well-formed precisely because the clause-type-determined word order coincides with the word order which would have been the result of letting (9) apply to that structure. Due to the syntactic fact that not must appear right after the copula in (8) we get a good surface structure without having to resort to clefting.

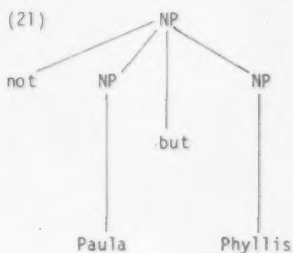
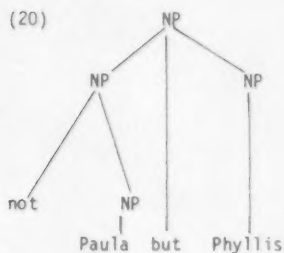
If we replace the verb be (in) of (8) with the verb visit, the clause-type-determined and focus-determined word orders do not coincide anymore, so the choice between those two word order principles will again be a relevant issue. But since only the former principle is allowed here, the negator may not be adjacent to the focus phrase in surface structure.

(19)a. He did not visit OSLO in September.

b. *He visited not OSLO in September.

Although it is a verb of location, be (in) behaves syntactically like the copula be and other auxiliaries in some respects.

2. Stating the adjunction operation of the transformation of (9) I used the symbol +, that is, I assumed that the adverb would be sister-adjoined rather than Chomsky-adjoined. If sister-adjunction is correct, then there is no way to distinguish between the syntactic representations of the two identical substrings not Oslo in (8) and in (19b). There is however an alternative analysis according to which not is Chomsky-adjoined to the left of the focus in those cases where (9) is applied correctly to the negated version of a sentence with a focus (cf. (1b) or (15)). If term 2 of (9) is Chomsky-adjoined, the subject noun phrase of the surface structural phrase marker of (15) will be represented as (20), and not as (21).



We can read it out of the subtree of (20) that the scope of not does not extend to the right-hand conjunct Phyllis. In (21) there is no such correspondence between syntactic representation and semantics.

It is hard to find a decisive argument for Chomsky-adjunction in connection with (9). The argument that I am now going to offer in favor of Chomsky-adjunction is not watertight, the reason being that my informants' intuitions were generally somewhat shaky when I presented them with the crucial sentences. In English and other languages without a special lexical item like the Swedish 'exclusive' conjuncter utan, Finnish vaan, or German sondern, there is a strong tendency to interpret sentential but-conjunctions of the type not Sentence₁ but Sentence₂ non-exclusively (or concessively), and phrasal but-conjunctions of the type

not Phrase₁ but Phrase₂ exclusively, all other things being equal (cf. Fretheim 1974, 1975). Thus (22) would normally be interpreted like (24), and (23) like (25).

(22) Sara does not speak Russian but she speaks Polish.

(23)a Sara speaks not Russian but Polish.

b Sara does not speak Russian but Polish.

(24) Sara does not speak Russian but she does speak Polish.

(25) It is not Russian that Sara speaks. It is Polish.

The same difference between exclusive and nonexclusive conjunction appears in (26)-(27) where the contrasted elements are verbs.

(26) Sara will not speak Russian but she will read $\left\{ \begin{matrix} \text{Russian} \\ \text{it} \end{matrix} \right\}$.

(27) Sara will not speak but read Russian.

Will serves as a tense marker for both verbs in (27).

On the other hand the auxiliary form does of (28) only serves as a tense marker for the infinitive speak. The other conjunct has its own present tense suffix.

(28) Sara does not speak but reads Russian.

I expected to find that native speakers of English would unanimously accept (28) and reject the version of (29) with parallel infinitives.

(29) Sara does not speak but read Russian.

It actually turned out that many of my informants had a hard time deciding which one of the two sentences (28) and (29) was the worse.

(The audience in Abo gave me the same impression of uncertainty of judgement.) But there were also people whose judgements tallied with my own, and everyone agreed with me that the VP-conjunction of (30) was acceptable and that (31) was not.

(30) Sara does not speak Russian but reads it.

(31) *Sara does not speak Russian but read it.

Although (31) is ungrammatical, parallel infinitive forms sound all right in (32).

(32) Sara will not speak Russian but read it.

I also found that my informants associated the V-conjunction of (28) more easily with the nonexclusive structure of (33) than with the exclusive structure of (34),

(33) Sara reads but does not speak Russian.

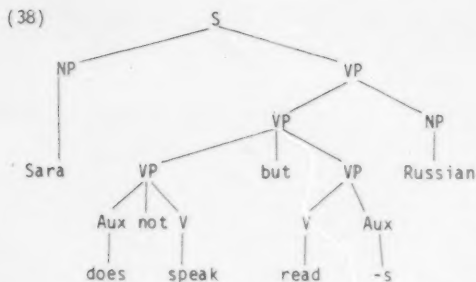
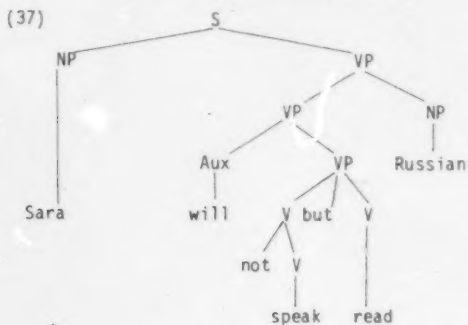
(34) Sara reads and does not speak Russian.,

in spite of the tendency to link the syntactic structure not Phrase₁ but Phrase₂ with the exclusive interpretation. Conversely, the VP-conjunction of (32) is generally understood to mean (35) rather than (36).

(35) Sara will read Russian and will not speak it.

(36) Sara will read Russian but will not speak it.

I am convinced that the unavoidable combination of infinitive and present tense verb forms in (28) is responsible for the 'not both at the same time'-interpretation of that sentence, and that the parallel infinitives of the sentences with will are responsible for the 'instead of'-interpretation of those sentences. We can account for the present tense form reads in the former and the infinitive read in the latter case by assigning distinct syntactic structures to the conjunctions of (27) and (28). In particular, I would suggest that will is Chomsky-adjoined and that does is not. According to my analysis the string not speak but read forms a constituent in (27), but the string not speak but reads of (28) is not a constituent. I propose the following surface structures for (27) and (28), respectively.



I have made a constituent out of not speak in (37), representing (27), but the same string is a nonconstituent in (38), representing (28). Thus the equivalence of (28) and the sentence conjunction of (39) is reflected in their syntactic representations.

(39) Sara does not speak Russian but she reads $\left\{ \begin{matrix} \text{Russian} \\ \text{it} \end{matrix} \right\}$.

The string does not speak will have the same syntactic representation in (28) as in (39).

I conclude that rule (9) may well involve Chomsky-adjunction instead of sister-adjunction, but so far I have not been able to prove that focus-determined word order means something more syntactically than just contiguity of adverb and focus phrase, in that order.

3.1. The distribution of the negator is freer in Norwegian than in English, but restrictions on where to put it do exist. Ikke generally follows the finite verb in main clauses and precedes it in subordinate clauses, and it cannot ever occur adjoined to the left of the finite verb in a main clause.

Ikke goes with the whole conjunction in (40).

(40) Jeg er sikker på at han ikke smakte på maten og spyttet den ut igjen.

(I am sure that he not tasted the food and spat it out again)

The word order of the complement in (40) is clause-type-determined. The main clause rule prohibiting finite verb forms preceded by ikke is a constraint on focus-determined word order, and there is no evidence that there should be fewer constraints on focus-determined word order in subordinate than in main clauses.

If the VP-conjunction of (40) had been in a main clause, the only available position for the negative adverb would be to the right of the verb form smakte.

(41)a *Han ikke smakte på maten og spyttet den ut igjen.

b ?Han smakte ikke på maten og spyttet den ut igjen.

Ikke creates an unwanted break in the coordinate structure of (41b), which can be avoided by one's shoving it out of the clause, as in (42).

(42) Det er ikke tilfelle at han smakte på maten og spyttet den ut igjen.⁵

(it is not the case that ---)

Because ikke is not placed outside the entire conjunction in (41b), it can very easily be interpreted as going with the left conjunct only.

But that interpretation does not really make sense here. You cannot spit something out that never was in your mouth.

It is known from the syntax of many languages that an adverb which goes with all terms of a conjunction should preferably occupy a position to the left of the first conjunct. The Norwegian word både of både---og-conjunctions generally appears ahead of the first conjunct but people are not always quite sure where to put this word. Certain conflicts may arise when the conjoined elements are verb phrases. For instance, I recently overheard an utterance with the form of (43).

(43) Han er både snill mot dyr og liker barn.

(he is both kind to animals and likes children)

I assumed that the only reasonable word order would have been that of (44), where både is to the left of the copula,

(44) Han både er snill mot dyr og liker barn.,

but the speaker had evidently decided that både is an adverb and that the unmarked clause-type-determined position to the right of the finite verb would therefore be a safe one.

Adversative conjunctions of the type ikke V₁ og V₂ or ikke VP₁ og VP₂ exist in main clauses too. There may be a conjunction of infinite verb forms, as in the following sentence.

(45) Han har ikke smakt på maten og spyttet den ut igjen.

(he has not tasted the food and spat it out again)

Unlike (41b) ikke is exactly where it ought to be in (45), but that is due to a word order principle which operates independently of the meaning of the sentence.

3.2. We find that a similar kind of conflict may arise in conjunctions with one negative and one positive conjunct. The Norwegian translation of "She doesn't cough, but sneezes" is (46).

(46) Hun hoster ikke, men nyser.

This surface structure has two pragmatically distinct interpretations which I have called exclusive and nonexclusive respectively. Because the position of ikke to the right of the first of the two contrasted verbs is not focus-determined, the nonexclusive interpretation will be the preferred one in a context which seems to admit of either interpretation. In other words, we tend to understand (46) like (47), and not like (48).

(47) Hun nyser, men hoster ikke.

(48) Hun nyser, og hoster ikke.

In (47)-(48) there is a lexical difference which correlates very nicely with the two interpretations, the nonexclusive and the exclusive. If you use the opposite order of conjuncts, the unambiguously nonexclusive surface structure is the sentence conjunction of (49),

(49) Hun hoster ikke, men hun nyser.,

but there is no unambiguous surface structure corresponding to the exclusive conjunction of (48). Since the focus-determined word order principle is not available in this case we must stick to the clause-type-determined principle, but that gives us (46) instead of the optimal surface structure of (50).

(59) *Hun ikke hoster, men nyser.

On the other hand, when this conjunction of verbs occurs in a subordinate clause, the clause-type-determined word order is such that the exclusive interpretation is definitely the favored one. Now the clause-type-determined order coincides with the correct focus-determined order, and the sentence is likely to be interpreted as if rule(9) had actually applied in the course of the syntactic derivation of the sentence.

The concessive adverb likevel does not sound too good in the environment of (51).

(51) ?Hvis hun ikke hoster, men nyser, er det likevel grunn til å holde henne hjemme fra skolen.

(if she not coughs but sneezes there is still a reason to keep her at home from (i.e. away from) school)

My informants found (52) more acceptable than either (51) or (53).

(52) Hvis hun nyser, men ikke hoster, er det likevel grunn til å holde henne hjemme fra skolen.⁶

(53) ?Hvis hun nyser, og ikke hoster, er det likevel grunn til å holde henne hjemme fra skolen.

I claim that (51) and (53) are deviant for the same reason. One is almost compelled to interpret the conjunction of (51) in the exclusive way. In other words, people will associate the surface structural string of ikke V₁ men V₂ with the way you interpret a focus-determined placement of ikke even in contexts where focus-determined word order would have been strange for semantic or pragmatic reasons. The word order of the embedded clause of (51) is not focus-determined. All the same people tend to connect (51) with (53) rather than (52). But in (54) below,

where there are two coordinate sentences conjoined by the causal connective så, the two propositions of "hun nyser" and "hun hoster" are not felt to be mutually exclusive, and the word likevel is not misplaced here.

- (54) Hun hoster ikke, men nyser, så det er likevel grunn til å holde henne hjemme fra skolen.

In (55) the environments of the conditional clause with the adversative V-conjunction are such that only the exclusive interpretation of the conjunction is appropriate.

- (55) Hvis hun ikke hoster, men nyser, skal hun selvfølgelig ikke ha hostesaft, men nesedråper.

(if she not coughs but sneezes, she shall naturally not have cough medicine but nose drops)

There is another adversative conjunction in the main clause of (55). The position of ikke in the main clause is clause-type-determined. (56), with focus-determined placement of the second not, is as acceptable to me as (55). The parallel exclusivity in the two conjunctions is brought out even more clearly in (56).

- (56) Hvis hun ikke hoster, men nyser, skal hun selvfølgelig ha ikke hostesaft, men nesedråper.

Adjunction of ikke to the left of the focal object noun phrase is much harder to accept when that noun phrase is not the first term of an exclusive conjunction. Compare (57) with (58).

- (57) Hvis hun ikke hoster, skal hun selvfølgelig ikke ha hostesaft.

- (58) *Hvis hun ikke hoster, skal hun selvfølgelig ha ikke hostesaft.

The point is that the position of ikke is bound to be focus-determined in the main clauses of both (56) and (58), but the verb hoster does not have to be prosodically prominent in (57). Whereas the substring ikke hostesaft at the end of the sentence will be understood as one half of an exclusive conjunction, ikke hoster in the hvis-clause will not. It is the juxtaposition of ikke hoster and men nyser which causes the grammatical deviance of (51). We are 'fooled' by the syntactic form. Put differently, syntactic surface structure affects our decoding strategies. A Norwegian surface string of the form ikke V men V₂ contains two foci which are understood to be incompatible in the context of the speech where they occur.

3.3. I have said that the position between the subject and the finite verb for Norwegian sentence modifiers in subordinate clauses corresponds to the main clause position immediately after the finite verb. But there is another position in the subordinate clause which is probably as common in spoken language as the one which I have referred to as clause-type determined, and that is the initial position, i.e. right after the conjoiner or complementizer. The word order of the relative clause in (59) is permitted even if the subject noun phrase following ikke is not stressed.

(59) Dette er den inngangen som ikke Jon fant.

(this is the entrance which not Jon found)

The nuclear stress of (59) would most likely fall on the verb fant of the relative clause. That prosodic pattern would be impossible in (60). Nuclear stress on the subject phrase of (60) is a prerequisite for the optional placement of ikke at the beginning of the sentence.

(60) Ikke Jon fant inngangen.

(not Jon found the entrance)

The word order of (60) is marked in a way that the word order of (59) is not.

I am not so sure that the strongly stressed subject of (60) is a focus. First of all, (60) is not equivalent to its cleft congener (61).

(61) Det var ikke Jon som fant inngangen.

Rather, any strongly stressed subject in Norwegian which is preceded by the negative adverb is presumably a theme, a contrastive theme. (60) seems to mean the same as (62), which has clause-type-determined word order but two stress tops, a prosodic pattern typical of sentences with a contrastive theme.

(62) JON fant IKKE inngangen.

I do not know whether or not the reordering transformation of (9) is involved in the derivation of (60). Supposing it is, then term 4 of the SD of (9) will have to cover contrastive themes as well as foci.

Whatever triggers the placement of ikke ahead of the subject of (60), it seems clear that the initial position of the negator signifies different things in (59) and (60). There is no particular functional reason why ikke should be in that position in (59), a sentence which is synonymous with (63).

(63) Dette er den inngangen som Jon ikke fant.

Whereas the word order of (60) is not neutral, the order of ikke preceding Jon does not in itself give prominence to Jon in the question of (64).

(64) Fant ikke Jon inngangen?

In fact this is the only acceptable word order if ikke is pronounced without much stress. (65) is not well-formed unless ikke is properly stressed.

(65) Fant Jon IKKE inngangen?

This suggests that ikke has undergone a process of cliticization to the verb in (64).

It is perfectly all right to bring into focus a particular phrase or set of phrases in an interrogative question permitting the answer "yes" or "no", but in Norwegian grammar this requires a stronger focusing device than heavy stress on the focus phrase. Focal stress on Jon in (66) does not make it synonymous with (67).

(66) Fant ikke JON inngangen?

(67) Var det ikke JON som fant inngangen?

There is also an obvious difference in grammaticality between the declarative sentence of (68) and the question of (69).

(68) Ikke Jon, men Ellen fant inngangen.

(not Jon but Ellen found the entrance)

(69) *Fant ikke Jon, men Ellen inngangen?

(found not Jon but Ellen the entrance)

Again a cleft sentence will improve things.

(70) Var det ikke Jon, men Ellen som fant inngangen?

(was it not Jon but Ellen who found the entrance)

We have seen that there is a strong tendency to interpret the surface string ikke Phrase₁, men Phrase₂ exclusively. (69) and similarly structured yes/no-questions are obviously not counterexamples, since they are not well-formed.

3.4. We should not take it for granted that the different ways of interpreting the surface syntactic pattern ikke Phrase₁, men Phrase₂ mean that an exclusive conjunction and its nonexclusive counterpart are semantically different, for by so doing we have tacitly assumed a three-valued logic as the basis of our semantic description. If we use a regular two-valued logic, the difference between exclusive and non-exclusive conjunction is of a pragmatic nature (cf. Fretheim 1975). It

will not be able to affect truth conditions as long as our logic is two-valued. If we assume that India is 'abroad' for the speaker of (71), then (71) is either true or false.

(71) I did not buy this table in India, but I $\left\{ \begin{array}{l} \text{bought} \\ \text{did buy} \end{array} \right\}$ it abroad.

But if we assume that India is in fact the home country of the speaker, then it is difficult to see how (71) could be either true or false.

Hence, if we were to reckon that there exists a 'zero' truth value in addition to truth and falsity, then (71) would have this third truth value in the possible world where "I bought it abroad" and "I bought it in India" are inconsistent statements. Conversely, (72) would be assigned the 'zero' value whenever (71) was either true or false.

(72) I bought this table not in India but abroad.

However, I believe that we should not talk about logical inconsistency at all in this case.

Even if our exclusive interpretation of the surface syntactic pattern ikke Phrase₁ men Phrase₂ does not show that semantic rules interpreting syntactic surface structures are required in an adequate linguistic theory, the difference between exclusive and nonexclusive does contribute to the meaning of adversative conjoined structures, at least if 'meaning' is used so as to incorporate even non-truth-functional properties.

4. The preverbal position of ikke in a clause marks it as subordinate. I have tried to demonstrate that a preverbal negator acquires a parasitic function in connection with an adversative conjunction with contrasted verbs.

There is a conflict between the clause-type-determined and focus-determined word order principles. Sometimes a particular content calls for a focus-determined word order because the corresponding clause-type-determined order could easily be associated with a different meaning, but the desirable focus-determined order happens to be structurally inadmissible according to rules of Norwegian grammar. Clause-type-determined order is the only possibility. In such a case one of two things may happen. Either the syntactic output is ambiguous and runs the risk of not being interpreted as intended by the speaker, or the output string is not distinct from the string which would have been the result of applying the focus-conditioned transformational rule (9) if that rule had been applicable. When a clause-type-determined

order of syntactic elements coincides with a focus-determined order, the listener is likely to pick whichever interpretation makes the most sense to him or her. Hence a clause-type-determined order may count as focus-determined. But then, if the intended message is not consistent with the use of focus-determined word order, one is not always in a position to pick the most likely interpretation. A sentence with clause-type-determined order may unfortunately still be comprehended as if the order were focus-determined.

There is probably a straightforward explanation for this. Whenever we employ a marked word order, we have a particular functional reason for doing so. At least, that is what our audience will think. It appears to be psychologically too complicated for us to discriminate between a 'marked' word order which simply cannot be helped (because there is no well-formed 'unmarked' alternative order), and one which is due to a deliberate choice on the part of the speaker. For instance, we will normally associate the surface syntactic pattern ikke Phrase₁ men Phrase₂ with exclusive conjunction without taking into account the transformational history of the sentence of which the conjunction is a part. Only the surface structure position of ikke relative to the two contrasted and conjoined phrases is relevant in this case. An analysis in terms of abstract syntax is bound to fail. Assuming a global derivational constraint to ensure that exclusive and nonexclusive adversative conjunctions receive the proper surface syntactic form will not do, for it is not always possible to put ikke in a position where it would suit the speaker's needs.

There may be a perceptual basis for our associating ikke Phrase₁ men Phrase₂ and Phrase₁ ikke, men Phrase₂ with distinct pragmatic properties. A syntactic theory dealing with constraints on sentence grammaticality cannot account for the iconic properties of the strings in question. Instead it seems that we must ultimately seek an explanation within a theory of speech perception and production. Certain suggestions concerning psychological complexity and syntactic form have been made by Thomas G. Bever and others (e.g. Bever 1970, Bever & Langendoen 1971), who have claimed the existence of perceptual strategies that are supposed to be independent of grammar.

I am now going to propose two perceptual strategies which not only Norwegians but any native speaker of a language that lacks a special 'exclusive' adversative conjoiner is likely to employ.

(73) Perceptual rule 1

$$\begin{array}{ccccccc} X & \text{not} & \text{Phrase}_1 & \text{but} & \text{Phrase}_2 & Y & \longrightarrow \\ & \text{ikke} & & \text{men} & & & \\ & \vdots & & \vdots & & & \\ X & [\text{not} & \text{Phrase}_1 & \text{but} & \text{Phrase}_2] & Y & \\ & \vdots & & \vdots & & & \\ & & & & & & \end{array}$$

(The brackets [] mean that the string between the variables X and Y will be perceived as a constituent.)

(74) Perceptual rule 2

$$\begin{array}{ccccccc} X & \text{Phrase}_1 & \text{not} & \text{but} & \text{Phrase}_2 & Y & \longrightarrow \\ & & \text{ikke} & \text{men} & & & \\ & & \vdots & \vdots & & & \\ X & \text{Phrase}_1 & \text{not} & \text{but} & & & \\ & & \text{ikke} & \text{men} & [\text{Phrase}_2 & Y & \\ & & & & & & \end{array}$$

[] signifies a major syntactic boundary. There is supposed to exist a major syntactic boundary between the two contrasted items of the conjunction.)

The postulation of the perceptual rules (73) and (74) entails that I do not believe Norwegian conjunctions may be subject to any kind of structural reanalysis caused by the application of certain word order rules in the course of the transformational derivation.

It would be nice if these perceptual rules or strategies could be generalized to account for our ways of interpreting og-conjunctions as well. One could hypothesize that a sentence containing a conjunction with the form ikke Verb Phrase₁ og Verb Phrase₂ will more readily be interpreted so as to fit the logical formula ' $\neg(p \wedge q)$ ' than the formula ' $\neg p \wedge q$ ', and that the opposite is true of the syntactic pattern Verb Phrase₁ ikke, og Verb Phrase₂. Then surface syntax would definitely affect truth conditions. It turns out however that things become very much more complicated once our attention is shifted from men-conjunctions to og-conjunctions and the question whether the scope of ikke is the whole conjunction or just the left conjunct. (75) may be interpreted either as ' $\neg p \wedge q$ ': "He does not like me. Yet he asks me to go to Italy", or as ' $\neg(p \wedge q)$ ': "It is not so that he both likes me and, in spite of that, asks me to go Italy".

(75) Det er sannsynlig at han ikke liker meg og likevel ber meg reise til Italia.

(it is likely that he not likes me and yet asks me to go to Italy)

On the other hand I would characterize (76) as unambiguous. Ikke cannot plausibly have the wider scope here.

(76) Han liker meg ikke og ber meg likevel reise til Italia.

(he likes me not and asks me yet to go to Italy)

So far, so good. We could maintain that (76) receives the ' $p \wedge q$ '-interpretation because ikke occurs to the right of the finite verb ber and enclitic pronoun meg, as opposed to the opposite relative order of ikke and ber in (75). But observe that we can easily place the conjunction in an environment where the word order of (75) makes the sentence well-formed and unambiguous. The word order of (77) seems to suggest a ' $\neg(p \wedge q)$ '-interpretation, but the other interpretation is the only conceivable one in a conditional clause.

(77) Hvis noen ikke liker meg og likevel ber meg reise til Italia,...

(if someone not likes me and yet asks me to go to Italy,...)

The adverb likevel had all the privileges of occurrence that ikke has, and some extra ones. More specifically, likevel is also a final-position adverb. Our hypothesis would predict that (78) would be a slightly better candidate for the wide scope interpretation than (76) because it is only in the latter sentence that likevel separates syntactically the two immediate constituents of the VP ber meg reise til Italia.

(78) Han liker meg ikke og ber meg reise til Italia likevel

Although I am personally inclined to believe that the final position of likevel in (78) can make a difference, my Norwegian informants were not willing to accept the possibility of assigning the other sense to that structure any more than to (76).

Finally it should be noted that (75) loses its potential ambiguity if ikke is put in the main clause. (79) does not admit of the narrow scope interpretation.

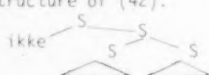
(79) Det er ikke sannsynlig at han liker meg og likevel ber meg reise til Italia.

(it is not likely that he likes me and yet asks me to go to Italy)

It is also quite clear that disjunctions of the type ikke Verb Phrase₁ eller ("or") Verb Phrase₂ are not felt to mean something different from Verb Phrase₁ ikke, eller Verb Phrase₂. In spite of the difference in word order they will most certainly both be used to express the 'neither-nor'-reading.

NOTES

- ¹ I might as well have chosen the expression 'focal prominence' as 'focal stress'. The term 'stress' has been retained because of its widely accepted use. It should not be taken to imply that I believe intensity to be the only, or even the most important acoustic parameter in connection with the phenomenon of focal stress.
 - ² In this paper I shall use a question mark to indicate a sentence whose deviance is believed to be of a semantic or logical rather than of a syntactic nature. Such sentences may be termed inappropriate or even incomprehensible, but hardly ungrammatical.
 - ³ This condition on the application of (9) presupposes that grammars must be organized so that syntax and stress-marking are intertwined in such a way that many syntactic rules may refer to the results of certain stress-marking rules applying prior to them.
 - ⁴ Because of the focus-determined position of *not* in (23a), the conjunction of that sentence is unambiguously exclusive, but when I read out (23a) and (23b) to my English informants without giving them a stipulated context, they all told me that the two sentences meant the same.
 - ⁵ The alleged non-equivalence of (41b) and (42) is probably due to a perceptual strategy rather than a transformational constraint. In particular, I do not believe that the (42)-reading of (41b) would imply violation of Ross' Coordinate Structure Constraint (Ross 1967). First of all, lenient informants do accept the wide scope reading of (41b). Secondly, if (41b) violates an island constraint, then (40) ought to be ill-formed too, but it isn't. Even if we assume that the VP conjunction of (41b) is a reduced S conjunction, there is no reason to believe that there is more than one negator in the input to the deletion rule. Its underlying structure may be that of (i), which is reminiscent of the surface structure of (42).
- (i)



As for the perceptual strategy muddling our sense of what is conveyed in (41b), I point out some initial difficulties with its formulation in the final section of this paper.

- ⁶ It is a tacit assumption here that if she had been coughing her case would have been even graver.

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PROBLEMS OF BASIC WORD ORDER

1.0. In this paper, I will first discuss different interpretations of basic word order. Then, a few comments on the unordered base hypothesis will be offered. Finally I will consider the claim made in transformational grammar that each language can have only one basic word order. Some troublesome data from Finnish are discussed in this light.

1. The term basic order comes from Greenberg (1963). He uses the relative order of Subject (S), Object (O), and Verb (V) to characterize languages that have different types of surface word orders. He states that although languages can have several orders of S, O, and V in declarative sentences, there is usually only one that is dominant. In terms of dominant orders, he distinguishes three types of languages: VSO, SVO, and SOV. However, the order of the major constituents is not the only indicator of the type. The order of many other elements correlates with the order of S, V, and O. For example, VSO languages have prepositions and postposed relative structures, while SOV languages have postpositions and preposed relative structures. It is not clear, however, what are the principles that account for this correlation, and whether the order of all constituents is determined by the type. If not, then which constituents follow the typological order and which do not? This means that it is not clear what a complete picture of a basic type looks like. In terms of those properties that Greenberg used as criteria, many languages turned out to be more or less of a mixed type.

As was mentioned above, SVO and the others represent dominant orders in declaratives. It was not specified in Greenberg's study what this dominance actually means. Is it for instance the most frequent order? Or is it what could be called neutral, with no constituent especially emphasized? There may be an intuitive notion of a basic, or dominant order in declaratives. For instance, people are likely to agree that in English, this order is SVO. But again, what is this based on? There are other fairly common orders in spoken language, e.g. the topicalized OSV. But topicalization makes the fronted constituent more prominent, and therefore, probably, OSV is not felt to be basic.

However, if we take the dominant order to mean something like "neutral", "non-emphasized", then some languages have more than one such order. Let us assume that we get the neutral order as an answer to the question: What happened? Then, both (1a) and (1b) could be answers to this question in Finnish.

- (1) a. Kalle löi Mikkoa. "Charles hit Michael."
 b. Minua puri käärme. "I was bitten by a snake."
 (Lit.: me bit snake)

That is, both SVO and OVS can be neutral or basic. Moreover, the neutral order in existential sentences is Loc.VS. Isačenko (1967) has made a similar suggestion for Russian. He argues that in sentences with two constituents, S and V, Russian has two surface orders which he calls unmarked: VS and SV. He uses stress patterns as the criteria to distinguish unmarked orders from marked ones. Thus, if basic order is taken to mean "unmarked", "non-emphatic", then some languages like English have one basic order, whereas some others can have several. One could claim that in Finnish, too, SVO is basic, because it is probably the most frequent order. But again one would like to know if there is anything substantial behind this high frequency.

So far, we have considered notions of basic word order in terms of surface structures. In transformational grammar, there is also a notion of basic order, but it refers to the underlying order. That is, it means the linear order of constituents produced by the base rules. Chomsky (1957) and (1965) presents SVO as the underlying order of English, but he does not give any motivation for this choice. When the base was considered to be universal, SVO represented the underlying order in all languages. The differences between Greenbergian types of VSO, SVO, and SOV were dealt with in terms of transformations: VSO languages were supposed to have a verb-fronting rule, SOV languages a verb-backing rule. This kind of treatment was given up, however. It was more realistic to have VSO and SOV as underlying orders, too, since the presence vs. absence of certain kinds of transformations could be connected with the underlying word order type.

The basic order that refers to surface structures, and the one that refers to underlying structures, are quite different things. First, the dominant surface order and the underlying basic order do not have to

be the same. Thus, McCawley (1970) has argued that the underlying order in English is VSO. He tries to show that if this order is assumed, some transformations are considerably simplified. He also suggests that there are only two types of underlying orders: VSO and SOV. McCawley's analysis has been argued against (e.g. Berman (1974)). This all just shows that surface orders do not tell us directly what type of underlying orders we should postulate. - Second, typological mixtures are likely to cause more trouble to TG than to the surface order typology. In the latter case, the worst is over if and when a dominant order is found: after that one can just describe different typological characteristics of the language. In TG, on the other hand, one has to postulate both the underlying order and rules that derive surface sentences. If a language has properties of several types, the choice of the underlying order may be difficult, and one can expect some ad hoc rules.

People working with transformational grammars have usually accepted the idea that the base has linear order specified for its structures. However, not everybody is of this opinion, as we will see in the next section.

2. Sanders (1969) has argued in favour of unordered base structures. His motivation is as follows: In the TG framework, the constituents are ordered twice: first in the base, then by means of re-ordering transformations. He argues that the ordering operation should be done only once. He sets up the following kind of system: There is no linear order specified in the base structures, only dominance relations and category memberships. Transformations are divided into two groups: ordering rules, and those that perform some other operation, such as deletion or regrouping. Ordering rules follow all other transformations. Moreover, once the order of some constituent has been fixed, no later rule is allowed to reorder them. - Bach (1975) has tried to find arguments against the unordered base hypothesis. He points out some cases, e.g. pronominalization, where a non-ordering rule presupposes a certain order of constituents, contrary to what Sanders suggested. However, as Bach himself admits, the question whether the base should have linear order or not is still open. The advocates of the unordered base have to show, among other things, that non-ordering rules do not need linear order of constituents in their structural description when properly formulated. They also have to find other ways of characterizing language types, which

TG does by means of underlying order.

3. Above, I have made some sketchy remarks about different notions of basic word order, and about unordered base. In the rest of the paper, I will assume that the base is ordered. This for the simple reason that I am not well enough acquainted with Sanders's framework. - In this section I will discuss some data from Finnish and try to illustrate one problem with the basic (deep) order, namely this: the requirement that each language has only one basic order which underlies all sentences can sometimes lead into somewhat questionable rules. It is obvious, however, why TG should put such a restriction: To allow any language to have more deep orders than one would be such a weak hypothesis as to render the notion of underlying order almost vacuous. On the other hand, both Greenbergian studies of surface properties, and work within TG have shown that many languages are of a mixed type. But some mixtures are harmless even in the TG framework, while others are not. For instance, if prepositions are considered a separate category, then it is as easy to write a base rule that places them before the NP, as it is to write one that puts them after the NP, no matter what the order of S, V, and O is. Yet, typologically prepositions should go with VSO and postpositions with SOV. But nothing in our grammar would tell us this. However, if prepositions are considered underlying verbs, then their position is predictable from the base order of S, V, and O. On the other hand, there may be structures that give rise to complicated or unnatural rules if we try to derive all surface sentences from a single base order.

How do typological mixtures come about? One reason is that many languages have undergone a change from one type to another, but have retained some characteristics of the older type. For example, Indo-European was SOV, but its descendants, e.g. English and German, are SVO (or VSO, according to McCawley). Likewise, Proto-Finnic was verb-final - as are many Finnic languages still - but Finnish is for the most part SVO. There are SOV characteristics left still, e.g. there are postpositions, along with prepositions; there are both relative clauses that follow the head and relative structures that precede the head; there are two kinds of comparative structures; finally, there are SOV type clauses. It is this clause type I am going to discuss here.

Some of the structures that we will consider involve emphatic stress on some constituent, which is in focus. These structures are typically

used in contexts where the speaker is denying or correcting something that has been said before. I have two purposes in mind: One, as stated before, concerns the problem of a single base order. The other is to add to the picture of focus in Finnish that has been given before (Hakulinen (1974), Heringer and Wolontis (1972); the latter paper is both defective and erroneous).

Let us consider the following sentences. (The word written in capital letters is the focussed (and stressed) element. Likewise, the capital letter stands for focus in the word order representation.)

- (2) 'It was a HORSE that John bought
(and not a cow).'
 a. Jussi osti HEVOSEN (eikä lehmää). s v 0
 J. bought horse and not cow
 b. HEVOSEN Jussi osti (eikä lehmää). 0 s v
- (3) 'This horse was bought by JOHN
(and not by Charles).'
 a. Tämän hevosen osti JUSSI (eikä o v S
 this horse bought J. and not
 Kalle).
 K.
 b. JUSSI tämän hevosen osti (eikä K.). S o v

The sentences in (2) and (3) show that the stressed element, either S or O, can be at the beginning or at the end of the sentence. We can think of two possible accounts, as follows.

A. The underlying order is SV0.

(2a): sv0

(2b): sv0 — 0sv (fronting of the focussed element)

(3a): Svo — ovS (permutation of S and o, cf. Passive in English)

(3b): ovS — Sov (fronting of the focussed element)

The sentences in (2) are unproblematic. In (3) the subject has travelled around. We get a somewhat simpler account of (3) by assuming an underlying VSO order, as in B.

B. The underlying order is VSO.

- (2a): vso — svO (thematization of s)
 (2b): svO — Osv (fronting of focus, like in A.)
 (3a): vso — ovS (thematization of o)
 (3b): ovS — Sov (fronting of focus, as in A.)

On the basis of these data only, an NP in focus involves an optional fronting, and obligatory stress. (Other constituents than NPs are not dealt with here.) Either of the underlying orders SVO or VSO will do; VSO gives a somewhat neater account. Since I am not interested in the VSO/SVO distinction here, I will treat them as alternatives in the sequel.

This is not all there is to focus in Finnish. If the sentence has more constituents than S, V, and O, we notice that the analysis given above is not satisfactory. Let us consider the following sentences.

- (4) "It was THIS HORSE that John bought at the market."
 a. Jussi osti markkinoilta s v p O
 J. bought market-from
 TÄMÄN HEVOSEN (eikä tuota).
 this horse and not that
 b. TAMÄN HEVOSEN Jussi markkinoilta O s p v
 osti.
 c. ?Jussi osti TAMÄN HEVOSEN markkinoilta ?s v O p
 d. +Jussi TAMÄN HEVOSEN markkinoilta osti. +s O p v
- (5) "It was JOHN who bought this horse at the market."
 a. Tämän hevosen osti markkinoilta o v p S
 this horse bought market-from
 JUSSI.
 J.
 b. JUSSI tämän hevosen markkinoilta osti. S o p v
 c. +JUSSI osti tämän hevosen markkinoilta. +S v o p
- (6) "It was AT THE MARKET that John bought this horse."
 a. Jussi osti tämän hevosen MARKKINOILTA. s v o P
 b. MARKKINOILTA Jussi tämän hevosen osti. P s o v
 c. +Jussi tämän hevosen MARKKINOILTA osti. +s o P v

The sentences (4)-(6) show that the focussed element can be either at the end of the sentence, as in (a)-cases, or at the beginning, as in (b)-

sentences. But if it is at the beginning, then the verb must be at the end. That is, two movement rules are needed for the focus: one fronting and one backing rule. In addition, we have to take care of the position of the verb. Now, let us consider the following possibilities of underlying word orders.

- I. The underlying order can be either SOV or SVO/VSO. If the former, the focussed element moves to the beginning of the sentence. If the latter, the focus is moved to the end.
- II. The underlying order is SOV. The focussed NP is moved either to the beginning, or to the end of the sentence. In the second case, the verb is obligatorily moved after the first NP (theme).
- III. The underlying order is SVO/VSO. The focussed NP is moved either to the end or to the beginning of the sentence. If to the beginning, then there is an obligatory movement of the verb to the end.

Alternative I allows two underlying orders: SOV and SVO/VSO. For each order, there is a simple rule that states the movement of the focus. However, allowing two underlying orders is a very weak hypothesis of the base order. So, let us leave this alternative aside for the time being.

Alternatives II and III both suggest a single underlying order, and two movement rules for the focus. One of them must apply, but the choice is optional. Both alternatives also have a movement of the verb. The movement in II is questionable: as far as I know, SOV languages simply do not move the verb. If this is true, II is out of question. We are now left with III. Is there anything suspicious there? I do not know of any principle that would prevent SVO languages from moving the verb to the end of the sentence. However, moving an element to either end of the sentence usually involves added emphasis on the moved constituent. Yet, the verb in the sentence-final position is not emphasized at all. It is the motivation and naturalness of the verb-final rule that is in question. One can say, of course, that we know very little what natural syntactic rules should look like; therefore, this argument against alternative III does not have much weight. It is enough, one could continue, if we can formally state the conditions where the rule applies. According to III we can: the verb-backing is triggered by

the fronting of focus. However, this is not quite true, as the following sentences illustrate.

- (7) "It was not a HORSE that John bought (but a car)."
- | | |
|--|------------|
| a. ?Ei Jussi ostanut HEVOSTA (vaan auton). | ?neg s v O |
| not J. bought horse but car | |
| b. +Ei HEVOSTA Jussi ostanut. | +neg O s v |
| c. Ei Jussi HEVOSTA ostanut. | neg s O v |
| d. +Jussi HEVOSEN osti. | +s O v |
- (8) "It was not JOHN who bought this horse (but Charles)."
- | | |
|---|------------|
| a. ?Ei tätä hevosta ostanut JUSSI (vaan Kalle). | ?neg o v S |
| not this horse bought J. — but K. | |
| b. Ei JUSSI tätä hevosta ostanut. | neg S o v |
| c. Ei tätä hevosta JUSSI ostanut. | neg o S v |
| d. +Tämän hevosen JUSSI osti. | +o S v |

Two comments: One. Sentences (a)-(c) in (7) and (8) begin with negation. Now, is this the only place for negation in Finnish? No. But in these sentences, the negation has a larger scope than focus has. In other words, people are arguing what John bought. The speaker of these sentences is denying what someone else has suggested before. If we have a focus, and the negation is in its ordinary preverbal position, the situation changes, as shown by the following examples.

- (9) a. Olet väärässä: Jussi ei ostanut HEVOSTA.
 b. Olet väärässä: HEVOSTA Jussi ei ostanut.

"You are wrong: it was a HORSE that John did not buy."

In (9), negation and focus have changed scopes: negation now has a smaller scope, no matter what their linear order is. That is, people are arguing what it was that John did not buy. The sentence-initial position of negation guarantees its larger scope in (7) and (8).

The second comment: People may disagree on some of the judgements in (7) and (8). For instance, the (a)-sentences may sound more or less acceptable. However, the corresponding (c)-sentences sound more idiomatic. The ungrammaticality of the (d)-sentences and of (7b) should be beyond question.

How do (7) and (8) change the picture given so far of focussing phenomena? First, the sentence-final position of the verb does not depend

solely on the sentence-initial position of focus: all sentences begin with negation. And only verb-final sentences are acceptable (or at least preferred). Moreover, the focussed element does not seem to move towards the beginning of the sentence, not even immediately after negation. This is shown by (7b), (8b), and the sentences in (10).

(10) 'It was not at the MARKET that John bought this horse.'

- a. Ei Jussi tätä hevosta MARKKINOILTA ostanut. neg s o P v
 b. *Ei MARKKINOILTA Jussi tätä hevosta ostanut. *neg P s o v

This means that there is no fronting rule for the focus if the sentence begins with negation. Whether or not there is a backing rule for focus here is somewhat unclear. Of the following two sentences, (a) with an unmoved focus (Object) may be better, but things are far from clear.

(11) 'It was not THIS HORSE that John bought for Liza at the market.'

- a. Ei Jussi TÄTÄ HEVOSTA Liisalle markkinoilta ostanut.
 b. Ei Jussi Liisalle markkinoilta TÄTÄ HEVOSTA ostanut.

Is sentence-initial negation the only case that complicates the picture? It is not. Sentence-initial emphatic *kyllä* 'yes', 'indeed', behaves similarly. There are some examples below.

(12) 'John did buy a HORSE (but not a cow).'

- a. ?Kyllä Jussi osti HEVOSEN. ?yes s v O
 b. *yes J. bought horse
 b. *Kyllä HEVOSEN Jussi osti. *yes O s v
 c. Kyllä Jussi HEVOSEN osti. yes s O v

So far, we have seen a verb-final structure only when the sentence has a focus. The final position of the verb co-occurs with a sentence-initial focus, or with placement of the negator or *kyllä* at the beginning of the sentence. This makes one suspect that the sentence-final position of the verb perhaps is not restricted to sentences with focus. This indeed is the case, as the following examples show.

(13) Ei minulla siitä mitään hyötyä ollut.

not me-on it-of any use was

"I did not have any use of it."

- (14) Kyllä minä sen hyvin ymmärrän.
yes I it well understand
"I do understand it well."
- (15) Kai minä jotakin muuta häneltä odotin
perhaps I something else he-from expected.
"I suppose I expected something else from him."
- (16) Kuka sinulle sellaisia valheita on kertonut?
who you-to such lies has told
"Who told you such lies?"
- (17) Jos Jussi sitä vielä pyytää, anna se hänelle.
if John it again asks give it he-to
- (18) Jussi ei saanut aikaan paljoakaan, vaikka hän
John not accomplished much although he
aina jotakin pientä puuhailikin.
always something small did
"John did not accomplish much, even though he was
always doing something."

None of the sentences in (13)-(18) has focus, but all of them have some verb-final structure. (14) and (15) begin with a particle, (13) with negation, (16) with a *wh*-word, and (17) and (18) have subordinate verb-final clauses. One could now associate the sentence-final position of the verb with some element at the beginning of the sentence, such as focus, negation, some particles and subordinating connectives,¹ or a *wh*-word.¹ We have to note, however, that it is not enough to specify the form of the sentence-initial element: (16), unlike ordinary questions, is not a neutral request for information. Rather, the questioner suspects that nobody told such lies. He is implicating that the addressee cooked them

¹This is actually what Gunnel Källgren (personal communication) did. I am very grateful to her for nice suggestions, although I am not going to consider them in detail in this paper.

up. Or else the questioner is surprised that anyone should have told such lies. Ordinary questions, i.e. requests for information, do not have verb-final structures. In other words, it is not just a certain grammatical element that conditions the sentence-final position of the verb: certain pragmatic inferences can also be needed for the sentence-final position of the verb.

We have seen that verb-final structures co-occur with certain sentence-initial elements, even though more is needed than that. Thus, it would be possible to state the conditions for a verb-backing rule fairly successfully, and keep SVO as the underlying order throughout. If the verb-backing is a natural rule for SVO languages, things are fine. But this is something that has to be found out.

Historically, SOV represents the older underlying order, and not the output of a backing rule. When the order changed into SVO, the old order still remained in certain kinds of structures in the spoken language. In fact, verb-final structures belong to a really lively, idiomatic speech. Could we now consider the SOV structures as a restricted subsystem that still represents the old underlying order? Or should we say that a restructuring has taken place, so that SOV orders are derived through a transformation?

4. This paper has been very inconclusive as to the choice between postulating two underlying orders, and having one deep order plus movement rules. The Finnish data are not very compelling one way or the other, especially because it is not clear what typical SVO languages can or cannot do. But a claim may still be valid even when some data fail to give it wholehearted support. So, let us try another track. Suppose an SOV language has begun to change into an SVO (or VSO) language. What is the evidence that there is a change going on? Sentences appear where the verb is not in the final position. Now, if SOV languages cannot have rules that move the verb, how are we going to derive those sentences where the verb is not at the end? If not with a movement rule, then by postulating a different underlying order. It seems only natural to assume that when a language is changing from one word order type to another, there is a period when two underlying systems are at work. It also seems likely that two underlying systems in a language can lie behind the so-called free word order.

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PARAMETERS AFFECTING THE POSITION OF CERTAIN ENGLISH ADJUNCTS

One of the most difficult problems in word order, and one which has occupied many grammarians of English over a long period, concerns the placement of adverbials, i.e. adverbs and their expansions, within the clause. It is a field in which the formalist's search for regularities of patterning has frequently been frustrated by apparent exceptions, and in which the semanticist is constantly hard-pressed to attach distinctive meanings to the different sequences he observes. At the heart of this descriptive problem lies the traditional classification of adverbials in terms of meaning, usually couched in criteria such as "answering the question 'how'", "denoting aspect or viewpoint", etc., a classification which has reached its culmination so far in the very detailed semantic system evolved by Quirk et al. (1972: 428-507), the most delicate subclasses of which still obstinately contain forms with entirely disparate positional possibilities.

As a practical teacher of English, the author has frequently been called upon to account for the positions of adverbials in English sentences, and has been led by this experience to attempt a positional classification somewhat on the lines of that of Law (1967) as presented in Nilsen (1972:67-69), grouping adverbials according to their sets of positional possibilities and leading to a dictionary of positional classes rather like a generalized form of that provided for detailed occurrences of individual adverbs by Jacobson (1964). The work forms part of a wider contrastive study of word order principles in English and Finnish in the light of errors made by Finnish students of English.

The overall grammatical framework implied here and intended for use in the analysis of the corpus itself is based on the three-level approach to syntax advocated by Daneš (1966) with the level of 'grammatical structure' analysed in the terms used by Quirk et al. (1972) against a background of Halliday's grammatical model (Halliday 1961; 1969), and the level of information structure in terms of Theme/Rheme, Given/New and Focus of information as defined by Halliday (1967). The necessary references to English intonation theory and the intonation markings used here follow O'Connor & Arnold (1961). A number of alternative approaches are possible for the semantic structure of the sentence. In the present paper the predication model proposed by Leech (1974) has been adopted, and many of the insights obtained may be attributed directly to the use of a model of this type.

Central to Halliday's formulation of what is largely a traditional model of grammar is the notion of 'rank', yielding a structure for the clause which operates with the positions Subject, Predicator, Complement and Adjunct, a scheme which is adopted by Quirk et al. (1972) with only minor alterations. Adjunct is the point at which adverbials may function in the structure of the clause regardless of their internal grammar, being themselves units at either group or group and word rank. In addition, adverbials which function in this way are to be regarded as essentially different from those which participate in the structure of a unit at group rank, e.g. by modifying an adjective within a Noun Phrase. The present discussion will be restricted to the positions within the sequence of clause constituents of certain types of Adjunct, namely those traditionally known as Adjuncts/Adverbials/Adverbs of Place and Time, and those Adverbs of Manner having an internal form Adjective + ly.

As indicated above, great confusion reigns in English grammars over the absolute and relative positions of adjuncts in the clause, even in the case of these apparently relatively straightforward classes. This confusion is admirably reflected in the extensive review of the literature on adverbials supplied by Nilsen (1972). He quotes one

H. Hungerford (unpublished Ph.D. dissertation) as giving the improbable example 'The man went there rapidly once more' and claiming that "when adverbs appear in groups of more than one, they seem to appear nearly always in the order indicated above", i.e. presumably Place - Manner - Time. Nilsen then goes on to quote W.N. Francis (1965: 57) as proposing an endocentric structure for verb phrases with multiple adjuncts and giving the sentence 'He went back then quickly' as illustrating "the usual, though not obligatory, order of adverbs according to meaning: place or direction first, then time, and finally manner". These two statements may be compared in turn with the order Manner - Place - Time for the three classes when appearing in end position as given by Quirk et al. (1972: 506) and others. Why do native English speakers, even allowing for differences in dialect and register, show so much variation in what they consider 'the usual' order of adjuncts? One may suggest three main reasons: the notional definition of adjunct classes, failure to consider the example sentences as meaningful utterances in context, and most significantly, failure to recognise the number of parameters determining word order in any one given instance.

The following is a brief and rather sketchy attempt to enumerate the principal factors determining the positioning of these particular adjuncts, followed by an outline of the manner in which the parameters thus recognised might be thought to interact.

GRAMMATICAL LEVEL

The first parameters which require consideration are those associated with the purely formal grammatical level. These serve to specify for English a set of clause types involving various configurations of obligatory constituents (Quirk et al. 1972: 343), and an associated inventory of positions for optional adjuncts (Jacobson 1964: 60-66, Quirk et al. 1972: 345, 426). Those relevant to the present discussion are:

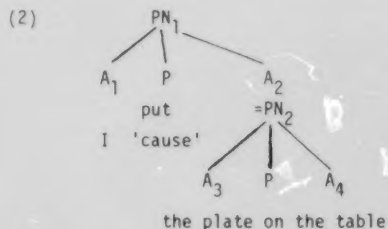
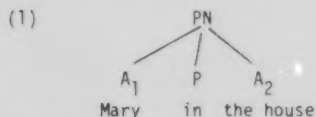
- front position - before subject in declarative clauses
- end position - after all obligatory clause constituents
- mid-position 1 - before first auxiliary
- " 2 - after first auxiliary
- " 3 - before main verb

The distinctions between the types of mid-position may frequently be neutralized depending on the number of auxiliaries present. A fourth variant of the mid-position will be proposed below, not envisaged as such by either of the above sources.

Concerning the obligatory clause constituents, Quirk et al. list seven major clause types, two of which obligatorily contain adjuncts:

- S V A - Mary is in the house.
- S V O A - I put the plate on the table.

These two are relational in character, the former normally positing a spatial relationship between two entities, the subject noun and the noun represented in the adjunct, and the latter being the causative version of the same relation, verbs of putting, taking, etc. being equivalent to 'cause to be' plus a lexical element. In terms of Leech's two-place predications we thus have



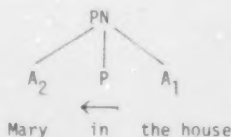
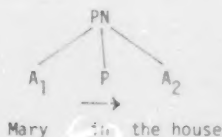
The relation indicated here may not necessarily be a spatial one. Abstract relations are also found, 'John is in a temper', 'Trouble is in the air', and also temporal ones, 'The accident occurred on Tuesday'.

The former examples would probably be classified notionally as Place in spite of their abstract nature, and there seems to be no reason for making any sharp distinction in the latter case, either, in spite of the traditionally recognised category of Time.

Note here also that Leech's predication diagrams are to be understood as representing groupings of elements, either one or two arguments and a predicate, in a manner which is neutral with regard to sequence in speech or writing, but ordered in the sense that a two-place predication may have an initial and final argument. This reflects the information structure of the sentence in context. Thus:

(1a) Mary is in the house.

(1b) *Mary is in the house.



and similarly (2a) I put the plate on the table.

(2b) I put the plate on the table.

The intuitively unmarked nature of the first example in each pair may be attributed to the tendency for the linear sequence of the arguments to coincide with their underlying order in English, giving an arrangement corresponding most closely to the 'Functional Sentence Perspective' of Firbas (1964), see also Halliday 1967: 213.

NON-OBLIGATORY RELATIONAL ADJUNCTS

Essentially the same semantic structure, i.e. that of a relational proposition, can be assigned to other classes of clause in which the adjunct is grammatically optional:

- (3) Many people eat in restaurants.

where 'Many people eat.' would be grammatically well-formed but semantically trivial, and

- (4) The thief had hidden the jewels in the bushes.

for which we may set up a four-term matrix of contexts for the adjunct possibilities:

Where had the thief hidden the jewels?

- (4) The thief had hidden the jewels in the bushes.

What had the thief hidden in the bushes?

- (4a) The thief had hidden the jewels in the bushes.

What had the thief done?

- (4) The thief had hidden the jewels in the bushes.

- (4b) The thief had hidden the jewels. (somewhere, without mention of where)

Sentences (4) and (4a) have the same semantic structures as (2a) and (2b) respectively, noting that in the case of the neutral context 'What had the thief done?' the embedded existential predication has no direction (order) imposed on it by the context, both elements being 'new', so that the identity of the initial and final arguments is determined by the same principle of unmarked order stated above.

'FOCUS' AND 'BACKGROUND' ADJUNCTS

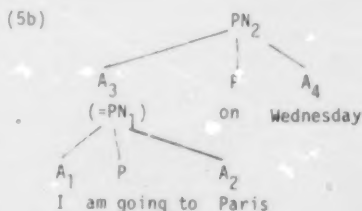
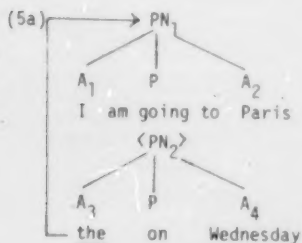
The extension of true S V A and S V O A structures to cases with grammatically omissible A may now be pursued a stage further, to involve instances where the adjunct is genuinely optional in a grammatical sense:

- (5) I am going to Paris on Wednesday.

Motion clauses may be considered as essentially a sub-type of the 3 V A relational clause above, differing only in their possession of a motion verb rather than a purely relational one. There seems to be no justification for recognising 'motion adjuncts' as being in any way different from Place adjuncts, since they simply occur in the environment of motion verbs. Note that English has many instances of verbs which allow free variation between the two forms:

- (6) My umbrella fell on the floor.
 (6a) My umbrella fell onto the floor.
 (7) I put sixpence in the collecting box.
 (7a) I put sixpence into the collecting box.

Returning to sentence (5), Leech proposes two possible semantic structures which would fit this case (1974: 267):



each of which posits the same relationship between the adjunct and the obligatory (nuclear) part of the clause as obtained between the adjunct and subject (intransitive) or object (transitive) in sentences (1) and (2) above, the difference lying in the subordination of the adjunct to the nucleus of the clause as a feature on the verb in (5a), while in (5b) it is superordinate, having the clause nucleus as one of its arguments. The former may be taken to correspond to

(5a) I am going to Paris on Wednesday.

in neutral contexts such as 'What are you planning to do next?',

and the latter to

(5b) I am going to Paris on Wednesday.

in the context 'When are you going to Paris?', or with PN_1 as final argument, to

(5c) I am going to Paris on Wednesday.

This enables us to draw an important distinction between a 'background' function for the adverbial in (5a) and a 'primary' function (i.e. in the superordinate predication) in (5b) and (5c), and to differentiate further in the latter case between functions as 'focus' (final argument) in (5b) and 'given' information (initial argument) in (5c).¹

An additional interesting case now arises with the form

(5d) On Wednesday I am going to Paris.

Both intuition and observations on the occurrence of the form in texts suggest that it might be derivable from either of the above structures, being at one time the Theme = Given equivalent of (5c) and also a variation of the neutral (5a) with thematized adjunct, the latter being borne out by the frequency of this pattern in paragraph initial sentences.

¹ It should be pointed out that while Leech proposes these two diagrams as alternatives, he does not suggest their use for the purpose of distinguishing primary and background adjunct functions, though they seem well suited for this. Leech uses them to solve the classic 'scope' ambiguity of clauses such as

He doesn't listen to you on purpose.

This clause, however, has its focus on the adjunct in both readings, thus conforming to pattern (5b) here, the two readings arising from differential negative placement:

in PN_1 - 'He doesn't listen to you, and does this on purpose'

or in PN_2 - 'He listens to you, but not on purpose'

The present use of the diagrams thus not only assigns Leech's 'Rule of Subordination' a more central place in the semantic structure of English clauses, but also furnishes a more plausible solution to his original problem.

For example, five out of the eleven prose passages in the samples used by Kruisinga & Erades (1953) have initial clauses of this type, a further four initial clauses being 'relational' in the above definition.

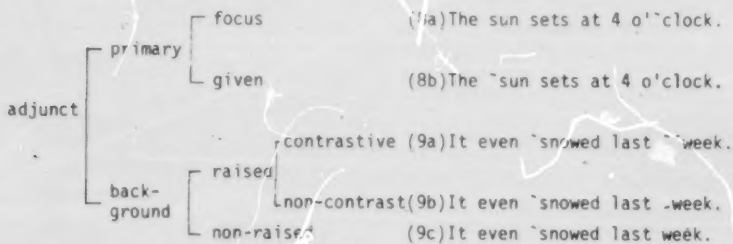
One further feature of (5a) and its transform (5d) is the possibility of two sense groups, understandable since neither adjunct nor clause nucleus is focus of information preferentially to the other, the grammatical subordination of the adjunct being indicated by the presence of a rise or fall-rise rather than a fall:

(5e) I am going to 'Paris on 'Wednesday.

(5f) On 'Wednesday I am going to 'Paris.

This process we may refer to as adjunct 'raising', the latter case, with a fall-rise intonation, being more contrastive in its effect than the former.

The way is now clear for a classification of adjuncts according to their function in the semantic structure of the clause. The following types have been recognised:



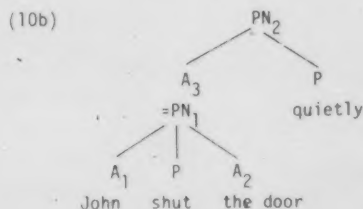
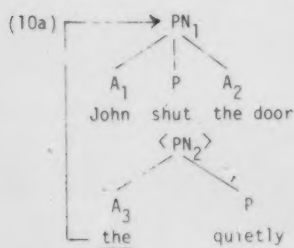
Obligatory adjuncts occurring in the relational clause types S V A and S V O A in (1) and (2) above also participate in this scheme, as 'primary adjuncts'.

The process of thematization may be viewed as an independent clause-rank option applicable to all the optional adjunct types listed above, but not to the obligatory adjuncts, for which both the formal patterns of inversion and its contextual possibilities are quite distinct:

- (8c) At 4 o'clock the sun sets.
- (8d) At 4 o'clock the sun sets.
- (9d) Last week it even snowed.
- (9e) Last week it even snowed.
- (9f) Last week it even snowed.

MANNER ADJUNCTS

Structures similar to (5a) and (5b) also apply to the -ly manner adjuncts:



John quietly shut the door. John shut the door quietly.

with the difference that here the adjunct comes to occupy mid-position (mid-3) in neutral contexts and when the focus is on the clause nucleus and end position only when the focus stress falls upon it. Since PN_2 is a one-place predication, sentences of the type

(10c) John shut the door quietly.

for the context 'What did John do quietly?' are rare, though not entirely unacceptable.

It is this underlying difference in semantic structure, hard to express in words, that often proves so difficult to grasp, but which leads Kruisinga & Erades (1953: 85) to refer to a 'slight, though real difference in meaning', even though Nilsen (1972: 15), who is much less sensitive to the niceties of English, considers the pairs

He suddenly discovered the letter.

He discovered the letter suddenly.

and

I immediately corrected it.

I corrected it immediately.

as 'exact paraphrases of each other'.

An interesting alternative position is found for the manner adjunct in the relational sentence types mentioned above, where it is located immediately before the obligatory adjunct when used as a background modifier. Thus

(11) A couple of policemen strode briskly into the room.

(12) The centre-forward placed his shot accurately in the corner of the net.

are on a par with (10a) and contrast in their semantic structure with the true end-position cases

(11a) A couple of policemen strode into the room briskly.

(12a) The centre-forward placed his shot into the corner of the net accurately.

which are equivalent to (8b). This may be suggested as a new mid-position mid-4.

A restriction is found on the position of the manner adjunct, as above, in cases where the PN_1 itself is semantically trivial:

(13) They lived frugally.

(14) The referee handled the match slackly.

cf.

- (13a) * They frugally 'lived.
- (14a) * The referee slackly handled the 'match.
- (13b) * ''Frugally they 'lived.
- (12b) * ''Slackly the referee handled the 'match.

This pattern again suggests a connection between mid-position and front position, which is borne out intuitively in that

- (8d) ''Quietly John shut the 'door.

seems acceptable as a thematized variant of (8a), but not

- (8e) *Quietly John shut the 'door.

from (8c).

MULTIPLE ADJUNCTS

It is now possible to turn our attention to clauses containing multiple adjuncts. The first case has already been dealt with:

- (5a) I am going to 'Paris on Wednesday.

and its associated forms, and we have seen that the adjunct sequence is based on the semantic structure of the clause, that acting as argument in the main predication coming nearest to the verb and the modifying adjunct in true end position (remembering that the positions are defined here specifically for the optional adjuncts, using the obligatory constituents as fixed points of reference). The same pattern holds good, however, for focussed optional adjuncts, regardless of whether these indicate Place or Time:

- (15) The sun sets at 4 o'clock in the north of Finland.
- (16) Lessons end at midday on Fridays.
- (17) We eat pea soup on 'Thursdays in Finland.
- (18) You can go to bed as late as you 'like on Saturday night.

In most of the above instances it would seem that the reverse sequence would be possible, but only with very strong emphatic stress on the focussed adjunct:

(15a) ? The sun sets in the north of Finland at 4 o'clock .
or, more plausibly, with a strong contrastive stress on the background adjunct:

(15b) The sun sets in the north of Finland at 4 o'clock.
but even so, the latter would be unusual compared with the equally contrastive

(15c) The sun sets at 4 o'clock in the north of Finland.

Manner adjuncts also participate in the same pattern, but since they are always focus adjuncts when in end position they naturally tend to preserve first place in the adjunct sequence:

(19) They played brilliantly in the first half of the match.

(20) The car has been running marvellously ever since it was repaired.

It thus seems that the distinction primary vs. background is the principal determining factor in the sequence of end-position adjuncts in the English clause, and that it is the relative frequency with which the traditional notional classes occur in the former capacity, Manner always when in end position, and Place much more often than Time, which has given rise to the commonly-quoted rule of thumb Manner - Place - Time. Similarly, since the thematized adjunct in initial position is related to the background adjunct type, one can easily appreciate the real rationale behind the series adduced by Quirk et al. (1972: 476):

(21) Many people eat in restaurants in London.

(21a) In London many people eat in restaurants.

but (21b) ⁺In restaurants many people eat in London.

A background adjunct will inevitably be the first candidate for thematization, rather than any focus adjunct which might be present. The example is thus related only in a very trivial way with the fact that

'in London' "denotes a larger place" than 'in restaurants', a dubious statement in any case in view of the definiteness of 'London' compared with the indefiniteness of 'restaurants'.

Before leaving the question of multiple adjuncts it is necessary to propose yet one further source of these, exemplified by:

(22) The concert takes place on "Saturday at the Welfare
"Hall.

(23) I bought these flowers last "week from a stall in the
"market.

Here we have cases of two focus adjuncts in each clause which are essentially equal in status, both obligatory (relational) in (22) and both points of information focus in (23), this being indicated by the presence of two separate nuclear tones. Intuitively the most satisfactory semantic analysis of this type would be to view the clause as a conflation of two predications, each having focus on its final argument:

(22a) The concert takes place on "Saturday.

(22b) The concert takes place at the Welfare "Hall.

(23a) I bought these flowers last "week.

(23b) I bought these flowers from a stall in the "market.

Note that these two predications are unordered with respect to each other, so that we may equally well find:

(22c) The concert takes place at the Welfare "Hall on
"Saturday.

(23c) I bought these flowers from a stall in the "market
last "week.

apparently without any difference in meaning. Presumably there exists a 'principle of linear construction' similar to that obtaining in co-ordinate structures which is simply concerned with the sequence in which the speaker chooses to present his facts, and which may reflect such factors as the logical sequence of events, hence:

(24) We travelled from 'Rome to 'Florence. (S V 'A_{obl} 'A_{obl})
as compared with

(25) We travelled to Florence from 'Rome. (S V A_{obl} 'A_{opt})
(cf. Quirk et al. 1972: 476):

One final rider which may be added to the patterns distinguished so far concerns the relative positions of adjunct and object, inversion of these apparently being possible provided that the object is long and/or complex and represents new material, forming one focus of information, while the adjunct is relatively short and simple and may be of any of the types distinguished above, with or without focus.

(25) The guest left under his plate a shilling piece and
an assortment of 'coppers.

(26) ... I read 'idly the destinations shown in the post-
marks of some bales on a lorry which rolled 'by us...

(Kruisinga & Trades 1953: 84)

(27) I'll bring you in the morning a list of all the people
attending the 'course.

It is often claimed that the motivation for the switch in adjunct position in examples such as (27) is disambiguation, since a final adjunct could be attributable either to the main clause or to the relative clause within the object. But note that the question does not arise in speech, when

(27a) I'll bring you a list of all the people attending the
'course in the morning.

(27b) I'll bring you a list of all the people attending the
'course in the morning.

and (27c) I'll bring you a list of all the people attending the
'course in the morning.

are all unambiguous, and ambiguity only arises in:

(27:) I'll bring you a list of all the people attending the
course in the morning

which may be either S V O A or S V O, but here the object is no longer a focus of information in the first reading, so that inversion is not really possible. It must thus be concluded that the inversion found here is motivated principally by a desire for end-weight coupled with end-focus (Quirk et al. 1972: 937-944), and only secondarily by the possibility of disambiguation.

CONCLUSIONS

The above scheme is not by any means intended to be a comprehensive or explicit account of the grammar of adjunct positions. It manifestly omits any consideration of inversion in the obligatory elements of the clause structure, for instance, including the transformation S V A $\rightarrow$ A V S, and ignores the existence of other classes of adjuncts. Nevertheless, it does provide the outlines of a limited system of parameters, in which two classes of adjunct need to be recognised, -ly Manner adjuncts and what we may call adjuncts of Circumstance, a fusion of Place and Time. These notional labels may still be given, provided that the classes themselves are set up on formal grounds (see Lyons 1968: 317-318). We then have a set of semantic structures involving one and two-place predications embedded within each other in a variety of ways, these being mapped into syntactic clause formulae of the type S V A, S V O A, S V O A A, A S V O, etc. with the positional possibilities of the exponents of A dependent on the origins of these in the semantic structure. Finally a number of superficial optional adjustments are available which entail departure from the regular syntactically and semantically determined sequence for the purpose of suiting the information structure of the sentence more closely to the pattern of Functional Sentence Perspective (Firbas 1964).

The summary diagram that follows attempts to collate the major patterns involved in the positioning of these two adjunct types, expressed in terms of the interaction between the parameters discussed. This, and indeed the whole description set out here, should be seen at

SEMANTIC STRUCTURE												
PREDICATION ORDER	$\alpha - \beta + 1 \rightarrow 2$	$\alpha - \beta + 2 \rightarrow 1$	$\alpha - \beta + 1 \rightarrow 2$	$\alpha - \beta + 2 \rightarrow 1$		$\alpha - \beta + 1 \rightarrow 2$	$\alpha - \beta + 2 \rightarrow 1$	$\alpha - \beta + 1 \rightarrow 2$	$\alpha - \beta + 2 \rightarrow 1$	$\alpha - \beta + 1 \rightarrow 2$	$\alpha - \beta + 2 \rightarrow 1$	
SYNTACTIC STRUCTURE	S V A	S V A	S V O A	S V O A	S V (O) A (A)	S V A (O) A (A)	S V (O) A (A)	S V (O) A (A)	S V A A2	S V A A2	S V (O) A1 A2 (A)	S V (O) A1 A2 (A)
	1a	1b	2a	2b	5a 9a	10a	5b, 8a	5c 8b 10b	22		23	
THEMATIZATION					A S V (O) (A) 5d, 9f	A S V (O) (A) 7a	A S V (O) (A) 8c	A S V (O) (A) 5c, 8d	A1 A2 S V		A1 A2 S V (O) (A)	A1 A2 S V (O) (A)
'RAISING'					S V (O) A A S V (O) (A) 9b, c	A S V (O) (A) 8d						
END-WEIGHT				S V A O 25	S V A (O) (A)			S V A (O) (A) 23				
'LINEAR CONSTRUCTION'					S V A A 11			S V A A1 23c	S V A A1 A1 A2 S V	S V (O) A2 A1 (A) 23c	S V (O) A2 A1 (A)	S V (O) A2 A1 (A) A2 A1 S V (O)

present as a hypothesis concerning the properties of these adjuncts which it is hoped to evaluate and extend, in terms of both additional sequence patterns and additional parameters, by future corpus work.

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SOME THOUGHTS ON VARIABLE WORD ORDER

1. Introduction

Recent studies of word order phenomena within the framework of functional sentence perspective theory have convincingly demonstrated the level of communicational segmentation of the sentence into theme and rheme to be a level of linguistic structure distinct from the level of purely syntactic structure.¹ Although these levels must be regarded as distinct, the ultimate linear configuration an utterance assumes in a particular language is determined to no small degree by the interaction of factors associated primarily with one or the other level, so that the forms word order phenomena ultimately assume within a specific linguistic system are not easily unambiguously related to the level of syntactic structure or to the level of communicational segmentation. In languages having variable word order, configurations serving purely communicational functions are easily mistakenly seen as resulting from syntactic factors; whereas configurations serving a purely syntactic function are easily attributed to communicative factors. The problem assumes an additional dimension of complexity when attempts are made to describe word order phenomena typically associated with language as spoken. Besides being able to fully utilise the acoustic dimension for the expression of communicative functions signalled by other means in language as written, language as spoken demonstrates a number of characteristics setting it apart from language as written to such a degree that in many respects we are justified in speaking of it as a phenomenon of an altogether different nature, with completely different types of factors determining the forms and functions of word order phenomena.²

1 Cf. Daneš 1964, Firbas 1964.

2 One must take care to distinguish 'language as spoken' from 'spoken language', since the former term implies the existence of a specific type of communicative situation, not necessarily accompanying 'spoken language'. The gradation is not clear cut, and a situation such as an informal interview on television might demonstrate a gradual transition from 'spoken language' to 'language as spoken'. See Zemskaja 1973 for further discussion.

In this paper we shall discuss the role of some of the factors determining the form and function of word order phenomena in spoken as opposed to written Finnish, with particular emphasis placed on the fundamentally different role played by topicalisation in the construction of written and spoken texts. The examples discussed will be drawn from contemporary Finnish literary works, with belletristically stylised dialogues serving as a basis, admittedly inadequate, for the illustration of specific grammatical characteristics of spoken Finnish.

2. The Process of Communication and Conversational Interaction

For the transmission of a message we require a communicant, a target for the communication, and a channel. A message cannot be communicated if there is no commonly held code; if the target is not in a position to receive the message, and if the communicant has not utilised the resources granted by the language for the presentation of his message in such a form that the target will not close the communicational channel. These last two factors, being in a position to open the channel, and maintaining the channel open for the transmission of the entire message, we shall refer to as the establishment of spatial and psychological contiguity respectively.

Language as written typically occurs within an act of communication in which the roles of communicant and target of communication are maintained throughout the transmission of the message. Because of the unidirectional flow of information, written communication may be characterised as an extreme form of monologue which is organised into structural units or texts consisting of paragraphs, which in turn consist of sentences. The high degree of organisation characteristic of written communication is called forth by its primary function - the transmission of detailed information concerning a severely limited sphere of discourse. The function of written communication allows for elaborate pre-planning and editing, with only the finished product normally being transmitted to the target of communication. In the actual transmission of written communication the factor of spatial contiguity is of little importance, since the written message may be transmitted over vast reaches of topographical space, as well as through centuries of chronological space. On the other hand, the factor of psychological contiguity assumes a crucial role in the organisation of written communication, since the communicant's choice of an appropriate form

for the transmission of his message is governed to no small degree by his ability to utilise the resources the language offers him within the limits set by the content of the message and the nature of its intended target. Some of these resources are of a purely technical nature, e.g. the organisation of paragraphs, the use of locutions such as 'In summing up...', 'In other words...', etc. Others are conventionalised within a particular speech community for the transmission of particular types of messages within specific communicational contexts. They are referred to as style and register.

In contrast to language as written, language as spoken typically occurs within an act of communication. Here the roles of communicant and target of communication are in constant alternation throughout the transmission of the message or messages. Because of the bidirectional flow of information, spoken communication may be characterised as an extreme form of dialogue or polylogue, organised into structural units or exchanges, which in turn consist of cues and comments, often in the form of questions and answers. The degree of organisation typical of language as spoken is also largely determined by its primary function - the transmission of non-detailed information within the context of social interaction. Written language is primarily concerned with the transmission of cognitive information - the propositional or purely factual content of the linguistic signals transmitted. But language as spoken must also transmit a considerable amount of indexical information - information concerning the biological, psychological, and social characteristics of the communicant itself, as well as interaction management information - cues allowing the participants in the verbal exchange to initiate and terminate their roles as passive or active communicant in a conventional and mutually acceptable manner.³ Language as spoken, in the sense adopted here, is typically spontaneous. Thus there is little editing or pre-planning. The communicant's knowledge of the attitudes prevailing within the speech community will largely determine the manner in which the possibilities offered by the spatial contiguity normally accompanying acts of spoken communication may be used for the establishment of

³ For the concept of indexical information see Laver 1968; for the concept of interaction management information see Schegloff 1968.

psychological contiguity. In comparison with the situation of the communicant which prevails in language as written, the situation normally accompanying language as spoken enables the communicant to utilise the resources of the language along with factors such as tone of voice, facial expression, gesture, and other 'paralinguistic' means characteristic of face-to-face interaction to ensure the successful transmission of his message.

3. Sentences and Utterances

A sentence differs from a random sequence of words by virtue of its exhibiting a syntactic structure. This may be overt, as is the case in Finnish and other languages having variable word order, or covert, as is the case in English, a language characterised by fixed word order. A linguist aims to describe the syntactic structure of a sentence in terms of grammatical functions assumed by its components; but in the case of languages having variable word order the presence of one word order permutation as opposed to any of a number of possible alternatives is another fact which the linguist must account for in his total description of the grammatical structure exhibited within the boundaries of a particular utterance.

The description of grammatical structure has traditionally seen the sentence as the highest unit, but in acts of communication users of language do not communicate by means of sentences, but rather by means of texts consisting of one or several utterances.⁴ For the purposes of this presentation we shall use the term sentence in referring to a syntactic structure having a specific lexical content and a non-contextualised theme/rheme structure determined solely by its lexico-syntactic structure, and the term utterance in referring to the structure obtained from a sentence by superposition of a specific communicative articulation into theme and rheme. From the standpoint of its internal grammatical structure and lexical content, a sentence may be said to convey referential information, and an utterance supplements this referential information by adding contextual information. The transition from sentence to utterance, then, may be

⁴ This has, unfortunately, not always been made clear in word order studies. Cf. Worth 1964, Kovtunova 1974.

said to involve the adaptation of a specific lexico-syntactic structure to the communicative goals set by the context and situation in which it occurs.

From the above it is evident that we understand a sentence as an utterance which presupposes a zero context. In languages having variable word order this non-contextualised utterance typically exhibits dominant word order, with the logical accent falling on its final component. In Finnish the dominant word order is SVC, so utterances such as:

- (1) Pekka asuu Helsingissä
Pekka lives in-Helsinki
'Pekka lives in Helsinki'
- (2) Maija osti kirjan
Maija bought book-accSg
'Maija bought a book'

exhibit in addition to their subject-verb-complement word order the non-contextualised communicative articulation⁵:

- (3) $S^{\alpha} - (V + \dots)^{\omega}$

The grammatical role of variable word order in non-contextualised utterances, then, is to act as a background to which a specific type of communicative articulation may be related.

It is well known that languages having variable word order make primary use of word order changes to signal different communicational structures for specific sentences. Although marked word order, such as that encountered in the utterance:

5 Here we use a modification of the algebraic notation introduced in Adamec 1966 for the depiction of communicative articulation. The sentence component on which the logical accent falls is denoted by italics. The functions of the communicative level are denoted by Greek characters, so that α indicates the most thematic constituent and ω the most rhematic constituent. Compound communicative components appear in parentheses and they are linked by a plus sign. The boundary between thematic and rhematic components is indicated by a dash.

(4)

Kirjan osti Maija

book-accSg bought Maija

'It was Maija who bought the book'

with the communicative articulation:

(5)

 $(C + V)^{\alpha} - \omega$

is commonly termed 'inverted' word order. The choice of the term is misleading, since it erroneously implies the primacy of 'normal' word order. What we have here is obviously not the inversion of a 'normal' word order, but rather the adaptation of a particular lexicosyntactic structure to a specific communicative goal. As Finnish regularly makes use of this device we must say that in this and similar instances Finnish word order, although variable, is nevertheless highly grammaticalised, even though word order functions here on the communicational rather than the syntactic level. The referential information is the same in both utterances, but the contextual information is different.

4. The Construction of Written and Spoken Texts

The type of message normally communicated by means of language as written typically involves paragraphs which themselves consist of sequences of utterances, usually of considerable length and grammatical complexity, dealing with what might be loosely characterised as the 'same' topic. Depending on the nature of the message and the personal preferences of the writer, it is possible to discern two main strategies for the construction of written texts: parallel and sequential progression of the argument introduced by the topic, which is normally found at the head of the paragraph. Most writing exhibits a mixture of the two strategies as is illustrated by the following example:

- (1) Poikajoukon oli nuoresta pitäen työnnettävä köyhästä mökistä ulos. (2) Leonhard muutti 19-vuotiaana Amerikkaan ja jäi sinne. (3) Hän tuli sokeaksi ja kuoli yksinäisyydessä. (4) Yrjö pestautui armeijaan ja toimi viimeksi sotilasmestarina Hämeenlinnassa. (5) Hän oli kiihkeä helluntailainen. (6) Eelis ja Kalle elivät erakkoina Makkaramännikkö-nimisellä maakappaleella. (7) Arvo ja Aate hankkiutuivat pienviljelijöiksi. (8) Emeli katosi moniksi vuosiksi Norjaan.

E. Paasilinna, Timo K. Mukka. Legenda jo eläessään,
page 14.

- (1) Right from the time they were young the boys had to be pushed out of the poverty-stricken cabin. (2) At the age of 19 Leonard

moved to America and remained there. (3) He went blind and died in solitude. (4) Yrjö enlisted in the army and was last known to be a sergeant-major in Hämeenlinna. (5) He was a fanatical Pentecostalist. (6) Eelis and Kalle lived the lives of hermits on a patch of land called Makkaramännikkö. (7) Arvo and Aate made preparations for becoming small farmers. (8) Eemeli disappeared for several years in Norway.

The first word of the first utterance of the paragraph introduces the topic (poikajoukko 'the (flock of) boys'), which also functions as the theme of the rhematic predication ...oli nuoresta pitäen työnnettävä köyhästä mökistä ulos '...had to be pushed out of the poverty-stricken cabin from a young age onward.' The subsequent utterances of the paragraph exhibit examples of both parallel and sequential textual construction, and they all add further information concerning the topic of the paragraph as set forth by its head utterance. Thus, utterances 2, 4, 6, 7 and 8 each tell us about specific members of the flock of boys, and each serves to develop the paragraph in a parallel fashion. Utterance 3, in contrast, conveys further information concerning the theme introduced in utterance 2, and in this instance the paragraph may be seen to develop sequentially, with the rhematic predication made about the theme of utterance 2 - the fact that Leonard (theme) moved to America at the age of 19 and remained there (rheme), functioning as the context for the statement made in utterance 3 that when he was in America (theme) he went blind and died in solitude (rheme). A similar, if not explicit sequential relationship links utterances 4 and 5. The final utterance of this paragraph provides what turns out to be the topic of the next paragraph, the first utterance of which is:

Eemil'in Norjan vaihe peittyi tarinoiden hämärään.
 Eemil's sojourn in Norway is shrouded in a mist of tales'
 and which goes on to recount how Eemil had a lively personality, but nevertheless never revealed anything significant about his experiences in Norway.

4.1. Topicalisation in Language as Written

Because the strategy of text construction in language as written follows specific highly conventionalised patterns, the reader is primarily concerned with following the progression of the exposition of the arguments concerning the topics of paragraphs from thematic to rhematic elements. In languages having variable word order this is primarily effected by allowing sentence constituents to arrange themselves in such a manner that the exposition essentially follows a

transition from thematic to rhematic element, with an occasional use of a marked word order (rheme to theme) for purposes attributable to such factors as stylistic and rhythmic considerations, disambiguation of potential structural homonymity, emphasis, etc. The different status assumed by each of these factors in determining the hierarchy of rules ultimately governing word order phenomena differs in detail from language to language. Nevertheless, studies utilising data from several languages give reason to believe that its primary grammatical function in their written manifestations is to allow for the arrangement of constituents in such an order as to maximally facilitate the transition from thematic to rhematic elements.⁶

The introductory utterance of a paragraph will normally provide what in the mind of the communicant is the topic the paragraph as a microtext is intended to treat in detail. Although the most obvious method of indicating the introduction of new topic in written language will thus be visual - the use of paragraph initial indentation - there are other supplementary means of introducing elements intended to function as new topics. Scrutiny of a contemporary Finnish novel, *Paratiisisaaren vangit* (Prisoners of Paradise Island), by Arto Paasilinna, reveals repeated use of the following commonly used markers of topicalisation: time expressions (äkkiä 'suddenly', sitten 'then', kun 'when', tällä välin 'in the meantime', etc.), the adversative conjunction mutta 'but', specific indefinite pronouns (eräs 'a certain', yksi 'one', etc.), as well as the introduction of a noun phrase designating a shift of attention to something that did not appear in the preceding paragraph (Aurinko laskee tropiikissa kuin punainen kivi mereen... (95) 'In the tropics the sun sets like a red stone falling into the sea...', Lautta oli singonnut tyrskyjen lennätämästä riuttojen yli... (130) 'Tossed by the breakers, the raft had been hurled over the reefs ...', Viinankeittäminen on mielenkiintoista työtä. (154) 'The preparation of liquor is interesting work'), or the introduction of a new setting by the use of an impersonal sentence containing a verb of appearing on the scene (Alkoi väsyttää. (14) 'It began to become wearisome', Tuli pimeää (47) 'It became dark',

⁶ Cf. Palä 1966, Admoni 1974 for detailed discussion on this point.

Sattui eräänä tällaisena aamuna, että... (117) 'on one of those mornings like this it came about that...', etc.).⁷ As the introductory utterances of paragraphs, sentences and locutions of the above mentioned types serve as overt cues indicating the inception of the transmission of information which is intended to be understood as new, even though communicative factors require that it be further articulated into theme and rheme in order to provide a context for the construction of any microtext which might follow.

On the basis of the above we think it justified to distinguish between topicalisation and thematicisation. By topicalisation we understand the overt marking of a particular utterance in a macrotext as the basis for a possible microtext. A well constructed paragraph will thus contain a topicalised utterance, usually at its head, which serves to introduce the argument set forth within it in greater detail. Thematicisation, on the other hand, involves the marking of a specific component of a sentence as functioning as its theme. In the construction of a written microtext the possibilities for thematicisation will be largely determined by the topic of the paragraph as well as by the lexical content and communicative resolution into theme and rheme of the preceding sentences. An emphasis on the former factor will result in parallel text construction, an emphasis on the latter factors in sequential text structure.

In the case of language as written, textual cohesion is maintained by an orderly progression from topic to topic, with the themes and rhemes of the sentences developing the topic in addition to setting the course to be taken in constructing the microtext eventually leading up to the next topic. Because of the primarily cognitive nature of written communication topicalisation is of secondary importance, its purpose being to indicate the transition to a new sphere of discourse and thus pave the way for the possible development of a new microtext. In languages having variable word order the use of an unmarked word order accompanied by the presence of a logical accent on the final component of the sentence functions as a marker of lack of topicalisation; this configuration indicates that the logical predicate of the sentence, the rheme, is adding additional

⁷ The numbers in parentheses are page references to A. Paasilinna, Paratiisisaaren vangit, Helsinki 1974. Underlining indicates the first word in the Finnish original.

information to the universe of discourse with which the microtext is concerned. Topicalisation, then, may be characterised as working in conjunction with thematisation on the communicative level of grammatical structure in the construction of written texts.

4.2. Topicalisation in Language as Spoken

The nature of the communicative act as manifested in language as spoken is such that the amount of purely cognitive information communicated about any specific sphere of discourse is much smaller, and consequently less detailed in nature than is the case in communicative acts carried out in language as written. As an instance of complex social interaction, the conversational situation itself must be regarded as a full component of the act of communication, with the paralinguistic means such as gestures, mimicry, etc. typically accompanying an act of oral communication duplicating or even replacing specific purely linguistic signals. Since the act of oral communication entails the transmission of indexical and interaction management information in addition to cognitive information, there is justification in characterising it as primarily situational, whereas written communication is well characterised as primarily contextual.

In contextual communication the speed with which the target of communication can function is set by its ability to deal with the printed word. Because of the passive role of the communicant and the active role of the target of the communication the reader is able to pause at will in order to arrange his thoughts, and monitor his understanding of the information being taken in by referring back to what he has already read, but in his own opinion not fully comprehended in the light of what has followed. In situational communication, in contrast, the spoken utterance is spontaneous, being produced, monitored, and edited during the act of communication itself. The only upper limit on the speed with which it is produced is set by the physiological constraints governing the motor structures involved in speech production itself. From the standpoint of the hearer, the only possibilities of referring back to a previous context are limited to begging pardon and requesting the communicant to repeat what he has said, or to repeat the supposed message in the form it was perceived as assuming. In spite of the availability of these communicative strategies, a spoken word once uttered cannot be recovered

with absolute certainty.

The active participation of both communicants in a typical conversational situation often has a direct bearing on the form the sentences assume. This may be demonstrated by scrutiny of the following belletristically stylised dialogue:

- (Solveig) - Mitä sä meinaat?
 (Famu) - Mitä! Sitä vaan että mies pitää olla että pysyy terveenä. Säkin olet iso likka etkä muka ymmärrä, hö. Niin se on.
 (S) - Ai sitä sinä meinaat.
 (F) - Juu, mutta nyt nukutaan. Huomenna on työpäivä molemmilla. Hyvää yötä.
 (S) - Hyvää yötä. Mutta älä nyt rähki niissä paikoissa.
 (F) - Mhyh.

L. Sinkkonen, Solveigin laulu, pg. 188

- (Solveig) - What do you mean?
 (Famu) - What!? Only that you need a man if you want to stay healthy. You're already a big girl now and you make like you don't understand, hmph. That's how it is.
 (S) - Ahaah. So that's what you mean.
 (F) - Yeaah, but now let's get some sleep. We've both got to work tomorrow. Good night.
 (S) - Good night. But don't work yourself to death in those places, now.
 (F) - Hmph.

In Famu's first sentence the object-initial word order is a marker of textual cohesion, linking her answer to Solveig's question syntactically as well as conceptually. Notice how Solveig repeats the same word order Famu used in response to her answer. In her following interlocution Famu introduces a new topic. This is foreshadowed by her choice of a neutral juu 'yeaah' as the head word for her interlocution, rather than of a confirmation such as Niin, sitä mä meinasinkin 'Yeah, that's what I meant', which might have been interpreted by Solveig as a signal to continue discussion of the same topic. Famu's juu is an abbreviatory device conveying the same meaning as the potential full utterance might have, but it is an indication that she will probably not relinquish the role of active communicant to Solveig just yet. As a marker of textual cohesion it is neutral, and here it opens the path for the introduction of a new topic. This is signalled by the adversative conjunction mutta 'but', which is immediately followed by the adverb nyt, which introduces a temporal setting for a new topic in addition to serving as its theme. When the role of active communicant is assumed by Solveig, after Famu's conventional salutation Hyvää yötä!

'Good night'; Solveig repeats the salutation, immediately following this with her own introduction of a topic utilising precisely the same strategy of topicalisation as did Samu, right down to the now semantically incongruous adverb *nyt* 'now'. Such repetition of words and syntactical patterns is a frequently used means of text construction in language as spoken, a fact which the above demonstrates to be linked to the central role of topicalisation in the organisation of oral texts.

In language as written, topicalisation introduces contexts against which microtexts may be constructed. Because of the primarily cognitive nature of the information conveyed by means of written communication, topicalisation is a relatively infrequently employed stratagem in them. In contrast to the relative constancy of topic demanded by written communication, the conversational situation, being more an instance of social interaction than of communication of information, requires that the participants constantly be aware of whether a specific rhematic element is to be regarded as a new topic, or as the basis for further treatment of the topic under discussion. The microtext of oral communication is the cue and comment, with the rules of interaction management frequently calling for a comment to be so phrased as to elicit a new topic from the temporarily passive communicant. Spoken language abounds in stock phrases and locutionary techniques enabling the active communicant to indicate whether the topic under discussion is to undergo further treatment or a new one is to be introduced, and one of the marks of a skillful conversationalist is the ability to recognise and make use of these linguistic conventions. Thus, in spoken Finnish we find frequent use made of the conjunction *ja* 'and' at the beginning of sentences, a marker indicating the continued treatment of the current topic:

- A - Meidän koulukirjoissamme sanotaan niin.
- B - Ja meiltä viedään teille hedelmiä.
- C - Ja tupakkaa.

E. Kilpi, *Hyvän yön tarinoita*, pg. 145

- A - It says so in our schoolbooks.
- B - And they bring you fruits from here.
- C - And tobacco.

On the other hand, the use of highly conventionalised formulas such as *Mitä niihin tulee, niin...* 'As far as they're concerned...', *Matkoista puheen ollen...* 'Speaking of trips...', *...puhumattakaan siitä, että...* '...not to mention the fact that...', etc. are all means

available to the speaker for indicating his decision to treat a specific rhematic element as the topic of a new microtext.

The central role assumed by strategies related to topicalisation in language as spoken may be seen as arising from the nature of the act of communication, the limited ability of the human mind to deal with large chunks of information without access to recall mechanisms, and the social conventions governing oral communication. The combination of these factors means that the microtexts of which a conversational exchange consists must of necessity be brief and additionally organised in such a manner that their content may be extracted without difficulty. Since the actual amount of cognitive information transmitted in language as spoken tends to be small, the frequent serving up of conversational gambits in the form of new and explicitly marked potentially new topics enables the participants in a conversational exchange to switch roles in a mutually satisfying manner. Repetition of the same syntactic pattern with a different semantic content serves as a marker of textual cohesion with the contextual information not conveyed by the organisation of constituents in such a manner that they would follow the 'natural' communicative progression from theme to rheme indicated by the other means available to the user of the spoken medium, such as clitic particles and sentence intonation. Thus, information pertaining to interaction management, together with the omnipresent necessity of maintaining psychological contiguity in the situation of conversational interaction may both be regarded as factors playing a crucial role in determining the forms language as spoken may assume.

The commonly used strategy of utilising an already available syntactic structure for the formulation of a response to a conversational cue is an indication that in languages having variable word order in their written form, word order in their spoken form might not be as labile. The availability of the acoustic dimension with all the possibilities it offers for indicating the communicative articulation of an utterance certainly diminishes the potential importance of specific word order configurations as manifestations of factors associated with the communicative plane. On the other hand, the tendency of word order patterns to be repeated along with other cues within oral microtexts is indicative of word order playing a role more readily associated with the syntactic level in the spoken manifesta-

tion of a language having variable word order.

It is not difficult to find examples in spoken Finnish of fixed syntactic frames such as *No, kuka sitten tietää* 'Well, who knows then', *Et kai sinä pelkää* 'You aren't afraid now, are you?', etc., in which a specific configuration of words accompanied by a specific rhythmic pattern conveys a meaning which is lost if the components are arranged in a different order. This in itself indicates that word order has a real syntactic function in determining the structure of certain locutions typical of spoken Finnish. Still, the essential difference between the spoken and written manifestations of a language having variable word order is not to be found here, since constructions of the above type are more commonly encountered in the spoken manifestation of Finnish primarily as a result of normative convention. Rather, we would like to suggest that the essential difference between spoken and written Finnish, as between the spoken and written form of any language, lies in the fundamentally different role played by topicalisation in these two manifestations of language.

5. The Different Role of Topicalisation in Language as Spoken and Language as Written

The immediate participation of the communicants in a speech situation entails a difference in the nature of the means used for conveying non-cognitive information. In order for an act of communication to be maximally successful, psychological contiguity must be established and maintained between the interlocutors. In writing this is primarily accomplished by means of the style, register, and phraseology typical of the subject being written about and the context within which the particular specimen of writing is to appear. In written communication the writer's primary means of establishing and maintaining psychological contiguity is to make use of his tools as effectively as possible in order to ensure that his content will be as easily retrievable as possible, with minimum interference being exerted by the linguistic form it assumes. This characterisation is not completely valid for belletristic language, i.e. the mode of communication in which language is being used as a medium for the production of works of art, but even here we find definite culturally determined stylistic restrictions on the degree to which the form of a message is allowed to take precedence over its content.

In a speech situation, psychological contiguity is established not only by use of an appropriate style or register, but also by paralinguistic and other non-referential factors. A particularly common method of establishing and maintaining psychological contiguity in speech situations is to inject emotional factors into the stream of speech which do not have any referential meaning, but rather demonstrate the interlocutor's attitude towards the message he is conveying. In spoken Finnish one of the means by which this is accomplished is the use of unstressed particles such as muka, sitä, etc., which convey a definite emotional overtone without explicitly conveying the communicant's thought's. For example in Famu's and Solveig's dialogue discussed previously the particle muka occurs in Famu's reply to Solveig's innocently intended question (...etkå muka ymmärrä,...). This particle conveys a degree of doubt as to whether or not Solveig is as naive as she is making herself out to be. The sentence could be paraphrased into English as '...and you mean to say you don't understand...?!' Similarly, in the brief exchange:

- (Saara) - Muista ettei tänne ole mitään asiaa ennen kuin paikka on löytynyt. Må en rupea ruokkimaan laiskaa aikaihmiä täällä.
 (Iså) - Ålå nyt saatana tommosia puhu. Kai sitä sentään koti pitää ihmisellä olla.

Solveigin laulu, pg. 128

- (Saara) - Remember that you are not to come here until you've found a job. I'm not gonna go feeding any lazy adults around here.
 (Father) - Damn it, don't go talking like that. After all, a person has to have a home.

The use of the rhythmically weak particle sitä followed by the relatively unstressed but rhythmically long sentään act together as means of delaying the impact of the rhematic and strongly stressed koti, here appearing as the first major constituent of the utterance, in addition to expressing a degree of emotional distance and disparagement towards Saara's previous callous injunction. The existence and use of unstressed particles of this type is balanced by the availability of rhythmically long and phonologically stressed parenthetic words such as saatana 'Satan', hyvånen aika 'for goodness sake', etc. These together add a rhythmic factor to the organisation of Finnish manifested in the oral mode in addition to conveying an emotional overtone.

As indicators of emotional and attitudinal states felt by a participant in a specific act of communication, particles such as those described above may be characterised as conveying indexical information. Since they also partake in the rhythmical organisation of the utterance, semantically empty particles tend to cluster around main constituents in such a manner that a spoken utterance containing them will often have two rhythmic peaks; the first indicating the topic of the microtext, the second containing the rhematic predication of its first utterance. Although Father's retort to Saara adds the cognitive information that as far as homes are concerned a person has to have one, the introduction of the topic home is accompanied by such a large amount of indexical information that it, rather than the actual predication, may be regarded as the actual informational center of the utterance. In contrast to the situation prevailing in language as written, the constant introduction of topics in language as spoken, often accompanied by indexical and interaction management information, makes the initial rather than the final component of an utterance assume central communicative significance.

In the construction of written Finnish texts topicalisation was seen to be a relatively infrequently occurring communicative phenomenon, the purpose of which was to provide the background for the construction of paragraphs or microtexts. Word order, on the other hand, had an omnipresent communicative role, serving as a primary means for ordering sentence components according to an increase in communicative dynamism in order to maximally facilitate the transmission of the complex cognitive information contained in a paragraph. In the construction of spoken texts, in contrast, topicalisation assumes a primary role in determining not only the ordering of the sentence, but also its acoustic shape, since the construction of microtextual units in language as spoken is as much determined by factors connected with the transmission of interaction management and indexical information in addition to maintaining psychological and spatial contiguity, as with the transmission of purely cognitive information. Because of the spontaneous nature of language as spoken it is characterised by the use of syntactic structures 'borrowed' from preceding utterances, use of holophrastic constructions, and an overall syntactic laconicity. All of these factors speak for the expression by other means of the com-

municative subtleties expressed by word order in language as written if they need be expressed at all. On the other hand, the syntactic interlinking characteristic of sentences occurring in close contiguity with one another, such as inter-sentential ellipsis and the marking of textual cohesion by repetition of the same word-order configuration, are factors indicating that variable word order, although reduced in its potentialities, has a true syntactic role in the organisation of oral texts.

6. Conclusions

The preceding discussion has attempted to suggest that the grammatical structure of language as written is considerably affected by factors emerging from the acts and types of communicational situations in which they occur. In Finnish, a language characterised by variable word order, we believe to have demonstrated that there is reason to suspect that the configurations assumed by word order phenomena in the written manifestation of the language are primarily determined by factors on the communicative level of grammatical structure, whereas in the spoken manifestation of the language word order phenomena function more on the level of the linear ordering of components, i.e. on the syntactic level. The information conveyed by utilisation of selective ordering in writing is conveyed by other means in speaking, thus allowing the ordering of constituents to be determined by the manner in which the utterance in question is to be ingrated into the unfolding conversational text, rather than by increasing communicative dynamism. If the suggestions made here in this respect do indeed hold up under closer scrutiny, a number of interesting questions pertaining to the study of variable word order are raised, the most important being the manner in which contextual and situational factors determine the manner in which word order phenomena function within a specific linguistic system can be included in a description of its grammatical structure. In order to describe grammatical structure, the investigator posits the existence of recurrent partials; if grammatical structure is truly determined to a considerable extent by situational and contextual factors, a framework for integrating an account of these

factors into our model of grammatical structure and the communicative competence it purports to depict is urgently needed.⁸

⁸ For attempts to construct a framework to deal with the extra-sentential factors having a bearing on grammatical structure see Worth 1964, Mistrík 1966 (with English summary), Kiefer 1970, Kovtunova 1974. For further discussion of some of the points raised in this paper see Lapteva 1974.

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THE PROBLEM OF INTERACTION BIAS
IN WORD ORDER PROBABILITY ESTIMATIONS

In order to give an idea of the frequency of a certain grammatical item in some position many grammarians use expressions like the following from GCE 1972:

In particular favours a position after the focused part. (p. 435)

M (= medial) positions are not normally open to direction adjuncts. (p. 478)

M positions are rare for most conjuncts and E (= end-positions) rarer still. (p. 527)

Let us consider the statement about in particular more closely. That this phrase favours post-position in relation to the focused part must mean that pre-positioning also occurs, and instances of this are in fact not difficult to find, e.g.

- (1) I remember in particular one masterpiece of commercial propaganda. (Huxley 1959:116)
- (2) Many other men then tried to decompose other substances besides water, and in particular Sir Humphry Davy tried many such experiments. (de Ville 1955:23)

This gives rise to various questions, such as

- A. How common is the less frequent pre-position in relation to the favoured post-position?
- B. Is the choice of pre-position arbitrary or can one or more factors causing it be found?
- C. If at least two factors are found to be at work, do they operate independently of each other or do they interact in exerting their influence?

An answer to question A can be obtained by systematically collecting examples from various texts. The value of general percentage figures, however, is not very great in comparison with the value of an analysis of possible factors that bring about the different positions.

One factor influencing the placement of in particular is mentioned

in Jacobson 1964:192, namely the weight of the focused part. If we reduce the object in (1) to the demonstrative pronoun that, we shall find that pre-position (3 a) requires much stronger stress on this pronoun than post-position (3 b) does.

- (3) a. I remember in particular that.
- b. I remember that in particular.

This means that the weight of the object in (1) must have played a role in bringing about pre-position.

However relative weight cannot be the sole factor that causes pre-position, since it is also of great importance to the placement of in particular whether this phrase occurs in a full clause, as in (1)-(3), or is an indicator of apposition (cf. GCE 1972:627-28), as in (4) and (5).

- (4) He, too, visited Italian universities, in particular Padua, ...
(Harrison 1958:20)
- (5) John and Mary have been very kind to me. I like them very much,
 in particular him.

When in particular stands in a clause, the focused part can be in end-position, as in (1), where it is the object, or in front-position, as in (2), where it is the subject. Such variation in the placement of the focused part is also an important factor, for in particular is more likely to occur before an end-positioned constituent than before one in front-position. One reason for this is that in particular in the latter case often gives rise to syntactic ambiguity in written English, since it can be taken to apply to the whole sentence, not just to the first part of it.¹

The three factors discussed above, one of which is phonological and two syntactic, cannot be said to operate independently of each other but interact in various ways in giving in particular its placement. Thus another reason why in particular normally appears in post-position when the focused part is at the beginning of the clause, as in (6) and (7), but quite often takes up pre-position when it is end-placed, as

1. In the spoken language ambiguity is prevented by the special stress and intonation on the focused part.

in (1) and (8), is that the focusing performed by in particular is reinforced by the added weight that this part receives in clause-initial or clause-final position.

- (6) Isobel Sands, in particular, was almost hysterical over the news ... (Wilson 1952:145)
- (7) In financial matters in particular detailed rules have to be followed ... (Jennings 1954:92)
- (8) Left to himself, without the officer, he (i.e. the soldier) uses his initiative freely, and so did, in particular, Brown and Fry, when eventually they escaped from a prison camp in Italy, ... (Verney 1958:158)

Cases where the word order is completely arbitrary hardly exist in English.² It is also difficult to find cases where only one factor is at work in bringing about different positioning. One example is the pre- and post-nominal placement of the adjective temporal. The only factor that affects the word order is the particular noun that forms its head: post-position occurs when this noun is Lord(s), otherwise pre-position is used.

In the case of the expression Lords temporal as opposed to such expressions as temporal conjunctions and temporal power, an estimation of the probability of one type of word order in relation to another is of no interest, since a particular factor exerts its influence with complete regularity. However, very often factors have variable influence, i.e. they operate only in a proportion of all potential cases. For example, sentence-initial positioning of the part that is focused by in particular usually, but not always, gives in particular post-position. Similarly, a question normally, but not always, causes inverted word-order, as in Is he ill, for occasionally the word order in He is ill with rising intonation is used instead. In such cases it would be of great value to be able to estimate how probable one type of word order is in relation to another in a certain linguistic environment.

Word order variation is particularly common in the area of adverbs, and most grammar books attempt to give their readers some idea of the

2. According to Lakoff 1974:X1-5, word order "is never completely free, but has constraints varying from language to language."

frequency of temporal adverbs, manner adverbs, etc., in certain positions. See, for example, the quotations from GCE 1972 above.

If we are writing an article for an American newspaper, we may be faced with the choice between versions a and b of (9).

- (9) a. The President will probably issue a statement tomorrow.
b. The President probably will issue a statement tomorrow.

The stress situation is meant to be the same in both versions: neither will nor probably is to be italicized, underlined or otherwise marked as receiving more than its usual stress.³

In making the choice between the two versions it would naturally be of great value to be able to estimate how likely b would be in relation to a in the language of American newspaper men. It is true that The New York Times Style Book, p. 13, prescribes that "an adverb used with a compound verb should normally be placed between elements of the verb", i.e. as in (9 a), but to what extent is this rule actually followed in the case of sentences such as (9)?

In order to be able to answer this and other questions in connection with the placement of English adverbs in relation to auxiliaries, I began about ten years ago to collect a large corpus of examples of such placement from one hundred American sources, ten of which were newspapers. See Jacobson 1975. In an earlier study (Jacobson 1964) I had already to some extent dealt with the pre- and post-auxiliary placement of adverbs in British English, and on the basis of that

3. This remark about the stress situation is actually a bit superfluous. Firstly, special stress on will in co-occurrence with probably can as a rule be expected only in sentences where will is not followed by a non-finite auxiliary or verb, as in (i), or in cases of contrast where will shares its subject with an earlier finite auxiliary and/or is followed by a non-finite auxiliary, as in (ii).

(i) Will you be told?
Yes, I probably will.

(ii) Wills says that if I take good care I might be, probably will be, in fine shape at the end of the year. (Hellman 1962:121)

Secondly, probably itself, when specially stressed, is more likely to be placed in a sentence-initial position than in a medial one, as in (9).

(N.B. If indeed I is inserted before probably in (ii), we have a case of contrast where no sharing of the subject occurs.)

study I selected a number of factors that I had found to influence the choice of these positions. In the quantitative analysis of the corpus each of these factors was treated as a group of variables. For example, the factor Type of Subject NP included among its variables such categories as personal pronoun, relative or interrogative NP, and "ordinary" NP, e.g. The President. Besides factors of such a purely syntactic type, there were also factors based on semantic criteria, especially the various meanings of adverbs, on textual considerations, such as stylistic province, and on phonological, graphonomical, or contextual evidence, e.g. emphasis. The relevant data for each example collected were transformed to magnetic tape and various computer programs were worked out for a statistical investigation of the whole material and the presentation of results in tabular form. Information about frequency in relation to pre- and post-auxiliary adverb placement was obtained for each of the several hundred variables involved. Moreover, a number of the most common variables were plotted against each other, so that, for example, the pre-auxiliary as opposed to the post-auxiliary frequency of probably in co-occurrence with will or would was ascertained. This frequency turned out to be as high as 33.2%, which is much higher than the mean pre-auxiliary frequency of probably (18.7%)⁴ or the mean frequency of adverbs preceding will or would (16.8%).

Having acquired this information we have taken a great step towards an estimation of the likelihood of pre-auxiliary placement for probably in (9), since probably here co-occurs with will. We begin to feel that we are on safer ground than if we were only guided by a rule about the pre-auxiliary placement of adverbs in general, or even of modal adverbs in particular. However, there are still many more steps to be taken before we have considered the whole linguistic environment of probably in (9). A variable working in the opposite direction to will is the type of subject NP in this sentence, for in co-occurrence with a subject such as The President the pre-auxiliary frequency of probably

4. The mean pre-auxiliary frequency applies to the whole set of examples where probably stands before the finite auxiliary. A two-variable combination like "probably/will or would" forms a subset in relation to that set.

proved to be only 11.6%. Moreover, the mean pre-auxiliary frequency figure for probably is based on many cases where a form of not has a strong influence on the pre-auxiliary positioning, as in (10), and also on many cases where a non-finite auxiliary occurs together with will or would, as in (11).

(10) John probably doesn't know.

(11) A statement from the President probably would have changed the situation.

In (9) there is no form of not and no non-finite auxiliary and we then have to look for the frequency figures of probably in such cases: 13.4% and 13.8%, respectively.

We now have percentages for four different combinations with probably and we naturally begin to be interested in finding a way to combine them so as to ascertain a probable pre-auxiliary percentage of sentences with probably in combination with will or would and an "ordinary" subject NP like The President, but with no co-occurrent form of not and no non-finite auxiliary.

One method would be to continue the computational plotting of variables against each other, so that frequency figures of combinations of three, four, and more variables might be obtained. This is technically possible, but would result in a very long and unwieldy list of combinations, most of whose frequency figures would be statistically non-significant.

Another method that I have tested in a fair number of cases involves the calculation of a coefficient for each combination of an adverb with another variable. Then all these coefficients are multiplied by the mean pre-auxiliary percentage of that adverb (i.e. in the case of probably 18.7%). The coefficients are arrived at by dividing the percentage of a combination by the mean percentage of the adverb. For example, the coefficient of the combination "probably/will or would" is yielded by the following operation:

$$\frac{33.2}{18.7} = 1.78$$

In the same way the following coefficients are obtained for the other combinations with probably that we have discussed so far.

<u>Probably</u> /'ordinary' subject NP	0.62
<u>Probably</u> /no form of <u>not</u>	0.72
<u>Probably</u> /no non-finite auxiliary	0.74

The likelihood of probably being placed in pre-auxiliary as opposed to post-auxiliary position in sentences with all the above variables could then be estimated to be as follows:

$$1.78 \times 0.62 \times 0.72 \times 0.74 \times 18.7\% = 11\%$$

However, our calculation is not yet specific enough. The estimated figure shows the probable pre-auxiliary percentage of a set of sentences that is larger than the subset of it to which (9) belongs, for it includes also sentences taken from other text categories than newspapers, e.g. fiction. Moreover, we may wonder whether sentences in the passive voice or with be + complement, and perhaps also occasional sentences with stressed will or probably have to be excluded from it. We therefore continue by working out coefficients for such further combinations found in (9) as "probably/newspapers" (35.4%), "probably/active voice" (26.3%), and "probably/unemphatic finite auxiliary and adverb" (18.1%). Now, however, we begin to be confronted with a difficult problem: the bias caused by the interaction of these parameters with our earlier parameters (cf. Enkvist 1975). Interaction bias between our first few variable-combinations could certainly also be established, but as it is comparatively small and, moreover, levelled out in many cases, it has been possible to neglect it. For example, the multiplication of the coefficients for the combinations "probably/'ordinary' subject NP" and "probably/will or would" by the mean percentage of probably gives 20.6%, while the percentage of the three-variable combination "probably/'ordinary' subject NP/will or would", which can be ascertained by counting the examples in the lists printed by the computer, is 18.1%, i.e. 2.5% lower. This difference, however, is levelled out by the fact that the multiplication of the coefficients for the combinations "probably/no form of not" and "probably/will or would" by the mean percentage of probably gives 24%, while the percentage of the three-variable combination "probably/no form of not/will or would" is 26.8%, i.e. 2.8% higher. In this connection it is interesting to note that Cedergren and Sankoff (1974:339) "in investi-

gating the relationship between the different components of the linguistic environment ... as factors influencing the application of a rule" assume independence, i.e. they do not consider the effect of interaction, until they have seen "how well the resultant models fit the data."

In the case of the variable-combinations of (9) we face two types of interaction.

In one type the parameters are on the same level of linguistic analysis, especially the level of syntax. Thus in (9) interaction greatly affects the three verb-phrase variables will or would, active voice, and no non-finite auxiliary. It is obvious that with no non-finite auxiliary in the sentence the finite auxiliary will or would can only occur in the active voice,⁵ and therefore the variable active voice must be regarded as redundant, which is equal to giving its combination with probably the coefficient 1. In other sentences than (9) a strong interaction bias that also has to be neutralized may be caused by the co-occurrence of the variables finite form of have and non-finite been. Here the combination with the finite form of have is always redundant since it follows automatically from the use of the combination containing been, for all the examples with been must also have a finite form of have. (It should be noted that have been in, for example, He must have been ill is here counted as a separate compound non-finite auxiliary variable.)

In the other type of interaction the parameters are on different levels of linguistic analysis. In (9) this applies to the phonological variable-combination "probably/unemphatic finite auxiliary and adverb" in relation to such syntactic variable-combinations as "probably/'ordinary' subject NP" and "probably/no non-finite auxiliary". Here the phonological variable-combination can be regarded as redundant, since one of its opposites, "probably/emphatic adverb" does not at all occur in the corpus, and the other opposite, "probably/emphatic finite auxiliary", occurs there only in sentences where the subject of will or

5. Exceptions are, of course, sentences like the answer to the question in (1) in fn. 3. Such sentences were not included in the corpus of Jacobson 1975, since they do not offer a choice between two or more types of mid-position.

would is shared with an earlier auxiliary (which is a case excluded by the variable-combination "probably/'ordinary' subject NP") and/or where will or would is followed by a non-finite auxiliary (which is a case excluded by the variable-combination "probably/no non-finite auxiliary"). Cf. fn. 3. Another instance of this type of interaction in (9) is the relationship between the stylistic variable-combination "probably/news-papers" and the syntactic combination "probably/will or would". The first of these combinations yields as high a coefficient as 1.89, while that of the second is 1.78. If both were applied, the estimated pre-auxiliary probability of (9) would be raised from 11% to 20.8%. But this would be a biased result, for the two combinations interact in a high degree in that probably in pre-auxiliary position in newspapers is usually co-occurent with will or would. This interaction does not, however, make the combination "probably/news-papers" totally redundant since other finite auxiliaries than will or would sometimes also co-occur with probably in newspapers. As observed above, treating a combination as redundant is equal to reducing its coefficient to 1, and in this case some intermediate degree of reduction is called for. That the reduction should affect the coefficient of the combination "probably/news-papers" and not that of the combination "probably/will or would" is obvious, if we consider that probably is frequently found in pre-auxiliary position before will or would also in other texts than newspapers, as shown by the following figures:

	Number of pre-auxiliary instances
Probably/news-papers/other aux than <u>will</u> or <u>would</u>	5
Probably/news-papers/ <u>will</u> or <u>would</u>	24
Probably/other texts than newspapers/ <u>will</u> or <u>would</u>	69
	29

It also appears from these figures that as large a proportion as 24 out of 29 instances of pre-auxiliary probably in newspapers has will or would, i.e. roughly 5/6 of them are shared by "probably/news-papers" and "probably/will or would".

We must now try to estimate the amount of reduction that we have to apply to the coefficient of the combination "probably/news-papers". So far we have only noted that it must be reduced to a figure between its full value, 1.89, and the redundancy coefficient, 1. In a number of

cases specially investigated the multiplication method has proved to function without any particularly great deviations when the number of shared pre-auxiliary instances does not exceed 2/3 of the pre-auxiliary instances of each of the two sharing combinations. If the shared proportion is larger, a general measure of the reduction required is given by the following survey:

Shared proportion	Reduction
Up to 4/6 (= 2/3 = 67%)	No reduction, i.e. full coefficient
About 5/6 (= 83%)	Halfway between full coefficient and coefficient 1
(Near) 6/6 (= 100%)	Coefficient 1

According to this survey the coefficient 1.89 should be reduced to a value roughly intermediate between 1.89 and 1, let us say 1.44.

We have now exhausted the number of factors for which we have reasonably statistically significant percentages. More factors could very well be pointed to, for example, that (9) is a principal clause, not a subordinate one. However, the clause type factor turned out to be of too little importance to influence the placement of probably very much. We can therefore regard the following calculation as our final estimate of the probability of version b of (9) in relation to version a:

$$1.44 \times 1.78 \times 0.62 \times 0.72 \times 0.74 \times 18.7\% = 15.8\%$$

This result may be compared with the empirical pre-auxiliary proportion yielded by the eight-variable combination "probably/newspapers/'ordinary' subject NP/will or would/no non-finite auxiliary/active voice/no form of not/unemphatic finite auxiliary and adverb", namely 2 instances out of 13 = 15.4%. The fact that the difference between this percentage and that obtained by means of our multiplication method is so small can be regarded as a test of the usefulness of that method in cases where it is possible to counteract the bias caused by too high a degree of interaction between parameters.⁶ A special way to avoid this

6. In this connection it ought to be pointed out that my calculations of the reduction necessary for the removal of interaction bias are based on trial and error, i.e. I have tested various amounts of reduction until I have found those which fit the empirical results best.

bias has been pointed to in the concluding chapter of Jacobson 1975: the regularly used two-variable combinations are replaced by three- or four-variable combinations in those particular cases where a strong bias can be suspected. This procedure is actually a compromise between the two methods suggested in this paper.

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SOME REMARKS ON TOPIC-COMMENT AND PRESUPPOSITIONS

1. The fact that presuppositions depend to some extent on the topic-comment structure of the sentence has been known for some time^{1/}. However, the details of this relation have not been investigated so far. The aim of this paper is to discuss some aspects of this problem, without any claim at completeness. Besides, this paper is thought of as a report on ongoing research rather than as a presentation of definite results.

2. "Topic" and "comment" seems to be relevant for the presuppositional structure^{2/} of sentences on at least two interpretations of these notions. Firstly, "topic" can be understood as "what is spoken about" or "what the sentence is about" and "comment" as that part of the sentence that expresses "what is said about the topic". This distinction should be understood as expressing semantic properties of the sentence. Following Dahl's suggestion, the topic-comment structure of a sentence as interpreted above can be represented by making use of the notion of "open sentence"^{3/}. Thus, a sentence like (1) can be rendered as (2):

- (1) John loves Mary. (the sentence is about "John")
(2) John_x: (x loves Mary)

(2) expresses the fact that we predicate the property "to love Mary" of "John". The subscript x of "John" represents the fact that "John" binds the variable x in (x loves Mary). The "comment" of a sentence is thus representable as an open sentence and the "topic" of a sentence as a variable-binding expression.

Secondly, "topic" and "comment" may be understood as something which expresses "old" and "new" information in the sentence. It is not easy to explicate the notions "old" and "new" information^{4/}. Here I shall be content to point out that each sentence which can be divided into two parts in such a way that one part represents "old information" and the

other part "new information" can be coupled with a wh-question where the question word refers to the "new information" -part of the sentence. Thus,

- (3) (a) Who loves Mary?
 (b) John loves Mary.
 (4) (a) Whom does John love?
 (b) John loves Mary.

In other words, in (3) (b) the new information is represented by "John" and in (4) (b) by "Mary". The question-answer relation can be made more precise by using, for example, the representation proposed by Keenan and Hull^{5/}. Keenan and Hull suggest that a wh-question can be represented by

- (5) (which, NP_x , S)

where S denotes the logical sentence (proposition) corresponding to the given natural language sentence S' , NP_x is a logical common noun phrase "formally interpreted as a set of individuals (the domain of (5)) and x is a pro-name occurring in S and referring back to the domain". Furthermore, (5) can be read as "Which NP are such that S?". Now it is possible to define, for every state of affairs i, a question-answer pair $\langle Q, A \rangle$, where Q is a wh-question of the form (5) and A is a definite noun phrase. A definite noun phrase A is a true answer to a question Q in i just in case $\langle Q, A \rangle$ is a true question-answer pair in i. I suggest now that A be considered as the "new information" in $S^{5/}$.

For simplicity's sake let us now reserve the terms "topic"-"comment" for the latter relation, i.e. "topic" will be called the information represented by the presupposition of (5) and "comment" the definite noun phrase A. For the relation represented by (2) we shall use the terms "theme" and "rheme".

3. Both the bipartition of the sentence into "theme" and "rheme", and into "topic" and "comment" have some bearing on word order⁷. Consider

- (6) (a) Budapest is the capital of Hungary.
 (b) The capital of Hungary is Budapest.

If (6) (a) is interpreted as a statement about "Budapest" and (6) (b) as

a statement about "the capital of Hungary", then (6) (a) can be represented by (7) (a) and (6) (b) by (7) (b)^{8/}:

- (7) (a) Budapest_x: (x is the capital of Hungary)
 (b) The capital of Hungary_x: (x is Budapest)

In other words, "Budapest" is "theme" in (6) (a) and (part of the) "rheme" in (6) (b). The noun phrase "the capital of Hungary" is (part of the) "rheme" in (6) (a) and "theme" in (6) (b). In free word order languages like Hungarian word order changes occur in such cases in non-copula-type sentences as well:

- (8) (a) Anna járt Stockholmban^{9/}.
 "Anna has visited Stockholm"
 (b) Stockholmban Anna járt.
 "Stockholm has been visited by Anna"

(8) (a) and (b) can be represented by (9) (a) and (b), respectively.

- (9) (a) Anna_x: (x has visited Stockholm)
 (b) Stockholm_x: (Anna has visited x)

Similar things happen if the "topic" - "comment" structure of sentences changes. Consider the following Hungarian sentences:

- (10) (a) Ki ment Budapestre?
 "Who went to Budapest?"
 (b) Péter ment Budapestre.
 (11) (a) Hová ment Péter?
 "Where did Peter go?"
 (b) Péter Budapestre ment.

Notice that (10) (b) could not be an answer to (11) (a) and (11) (b) could not be an answer to (10) (a).

Though there is a considerable overlap between the effects of "theme"- "rheme" - structure and "topic"- "comment" - structure on word order and the two bipartitions may even coincide, this is not necessarily always the case.

Consider, for example, (12)-(13):

- (12) (a) When did Anna visit Budapest?
 (b) Anna visited Budapest last week.

- (13) (a) What does Peter eat?
 (b) Peter eats bagels.

In (12)(b) the time adverbial "last week" is the "comment" of the sentence but it would be awkward to claim - given the above definition of "theme" and "rheme" - that it is also the "rheme" of this sentence. In (12)(b) it is predicated of "Anna" that "she visited Budapest" and this predication is then further specified by the time adverbial. In other words, (12)(b) has the structure of (14):

- (14) Anna_x: (x visited Budapest last week)

Similarly, in (13)(b) "bagels" is the "comment" of the sentence, the "rheme" of this sentence is, however, "eats bagels".

4. Let us now turn to our main topic. I shall first discuss the relation between "theme"- "rheme" and presuppositions. Consider the following sentences:

- (15) (a) Napoleon was the greatest soldier.
 (b) The greatest soldier was Napoleon.
- (16) (a) De Gaulle is the king of France.
 (b) The king of France is de Gaulle.
- (17) (a) John believes that 41 is the greatest prime number.
 (b) John believes that the greatest prime number is 41.
- (18) (a) If we had not been careful, Svensson would now be the first president of Sweden.
 (b) If we had not been careful, the first president of Sweden would now be Svensson.

It can easily be seen - granted that the corresponding subject noun phrases are the "themes" of the sentences - that (15)(b), but not (a), presupposes that "there is a greatest soldier", (16)(b), but not (a), presupposes that "France has a king", (17)(b), but not (a), presupposes that "there is a greatest prime number" and finally (18)(b), but not (a), presupposes that "Sweden has a president". The examples also illustrate that this phenomenon seems to be independent of the modal frame of the sentences. What really matters is the "theme"- "rheme"-structure of the sentence. On the basis of these observations one might stipulate the following rule:

$$(19) \quad \text{If } NP_x: (x \text{ Predicate}) \longrightarrow p$$

where NP is a definite noun phrase and p is the existential presupposition of NP^{10/}. The fact that NP is the "theme" of the sentence seems to be a sufficient condition for the presence of the corresponding existential presupposition. The examples (15)-(18) may at first glance suggest that (19) can be made stronger, i.e. it can be formulated as a necessary and sufficient condition for the presence of p. Closer inspection reveals, however, that there is at least one exception to this stronger claim: proper names preserve their existential presuppositions even if they are in "rhematic" positions. This apparently irregular behavior of proper names can, however, easily be explained by other semantic properties of proper names^{11/}. If we now add the condition to (19) that NP ≠ proper name, then (20) seems to cover all examples discussed so far:

$$(20) \quad \text{Iff } NP_x: (x \text{ Predicate}) \longrightarrow p$$

This is not the whole story, however. The presuppositional behavior of sentences containing transitive verbs seems to depend on the type of object which the verb takes. Consider the following sentences:

(21) John has seen the most recent Hungarian film.

(22) Anna has prepared the dinner.

It seems to me that (21) can be analyzed into "theme"- "rheme"-structure in two ways: either "John" is the "theme" and it is predicated of "John" that

"he has seen the most recent Hungarian film" ("rheme"), or "the most recent Hungarian film" is the "theme" and it is predicated of it that "John has seen it" ("rheme"). In both cases, the NP "the most recent Hungarian film" seems to carry an existential presupposition. On the other hand, though (22), too, can be analyzed - into "theme"- "rheme"-structure in two different ways, the NP "the dinner" carries an existential presupposition only if it is the "theme" of (22), i.e. if (22) means something like "The dinner has been prepared by Anna". The difference between (21) and (22) can clearly be seen if one negates these sentences:

(23) John has not seen the most recent Hungarian film.

(24) Anna has not prepared the dinner.

Both (21) and (23) seem to imply that "there is a recent Hungarian film" but only (22), and not (24) implies that "the dinner has been prepared".

The difference between (21) and (22) is that in (21) we have to do with an "object of direction" and in (22) with an "object of result". Some further examples, taken from Hungarian, may make this point clearer.

(25) (a) Péter eladja az autóját.

"Peter sells his car"

(b) Az autóját Péter adja el.

(26) (a) Péter felépítette a házat.

"Peter has built (up) the house".

(b) A házat Péter építette fel.

Once again, (25)(a) carries the presupposition that "Peter has a car" while the definite noun phrase "the house" in (26)(a) does not have any existential presupposition. On the other hand, both (25)(b) and (26)(b) carry an existential presupposition, the presupposition in (25)(b) is the same as that in (25)(a) and the presupposition of (26)(b) is that "there is a house". Notice the ungrammaticality of (27)(a)-(b) and (28)(b) and the grammaticality of (28)(a):

(27) (a) +Péter nem adja el az autóját, mert nincs is autója.

"Peter does not sell his car because he does not have any car"^{12/}.

(b) +Az autóját nem Péter adja el, mert nincs autója.

- (2d) (a) Péter nem építette fel a házat, tehát nincs ház.
 "Peter has not built (up) the house, hence there is no house".
 +A házat nem Péter építette fel, tehát nincs ház.

In other words, definite objects that are "objects of direction" seem to carry an existential presupposition in rhematic as well as in thematic position while this is not true for "objects of result" which carry an existential presupposition only if they are moved into a thematic position. The reason for this seems to be fairly clear: "objects of direction" exist before the action described by the verb sets in while "objects of result" are generally brought about by this action. Hence if this action does not take place, there is no existing object and consequently no existential presupposition can be associated with this object. This observation taken together with the behavior of proper names leads to the following general principle:

(A) If a definite description carries a presupposition in rhematic position it preserves this presupposition if moved into a thematic position.

To this principle we have to add the following principle:

(B) If a definite description which is capable of carrying an existential presupposition does not have any such presupposition in rhematic position, it will be associated with an existential presupposition if moved into a thematic position.

These two principles seem to govern the presuppositional behavior of the articulation of sentences into "theme" and "rheme" and they replace the rule given in (20).

There is nothing surprising about the fact that thematic definite noun phrases carry an existential presupposition. No matter whether the definite noun phrase is interpreted attributively or referentially its function in thematic position is to pick out some person or object of which then something is predicated in the sentence^{13/}. Though I have drawn most of my observations from Hungarian, these principles seem to be good candidates for being "universal principles". The proof of this stipulation must, however, be relegated to further research.

5. Let us now turn to the question of how the "topic"- "comment"- articulation influences the presuppositional structure of the sentence. I shall restrict myself to two problems. The first problem concerns factive predicates, the second one emphatic constructions.

5.1. It is well-known that factive predicates can be divided into two main classes. The first class comprises all cognitive factives /know, realize, discover, fail, forget etc./, the second class consists of emotive factives /to be glad, to be sad, regret, to be angry, etc./. Cognitive factives and emotive factives exhibit disparate syntactic properties in some languages. We shall not be concerned with syntactic criteria here, however. More important for our purpose is the following semantic distinction. The presuppositions of cognitive factives cannot be negated with internal negation:

- (29) (a) +Peter knows that Mary arrived but Mary did not arrive.
 (b) +Peter does not know that Mary arrived but Mary did not arrive.

Emotive factives in Hungarian permit in some cases such a negation:

- (30) (a) Péter örül, hogy Mária megérkezett, pedig Mária nem érkezett meg.
 lit. "Peter is happy that Mary arrived but Mary did not arrive"^{15/}.
 (b) +Péter nem örül, hogy Mária megérkezett, pedig Mária nem érkezett meg.
 "Peter is not happy that Mary arrived but Mary did not arrive".
- 31) (a) Péter haragszik, hogy Mária megérkezett, pedig Mária nem érkezett meg.
 lit. "Peter is angry that Mary arrived but Mary did not arrive".
 (b) +Péter nem haragszik, hogy Mária megérkezett, pedig Mária nem érkezett meg.
 "Peter is not angry that Mary arrived but Mary did not arrive".

It is a general rule in Hungarian that the presuppositions of emotive

factives can be negated in the positive case (cf. (30)(a) and (31)(b)) but not in the negative case (cf. (30)(b) and (31)(b)). This can perhaps be accounted for by the following considerations. One may assume that emotive factives are potentially ambiguous in Hungarian ("presuppositional ambiguity"). Thus, a sentence like

(32) Péter örül, hogy Mária megérkezett^{16/}

may mean two things: on the one hand, that the proposition "Mary arrived" is true in Peter's world but not in the speaker's world, or alternatively, that it is true in both possible worlds. Consequently, the sentences (30)(a) and (31)(a) are made unambiguous by the negation of the factive presupposition. This would no doubt account for the grammaticality of these sentences. What about (30)(b) and (31)(b), however? If emotive factives are presuppositionally ambiguous, then the negation of the main clause should not change this ambiguity and (30)(b) as well as (31)(b) should be grammatical. These sentences are, however, completely wrong. In order to see what is going on here let us try to interpret the sentences (30)(a) and (31)(a). In these sentences the use of "but" is not motivated by the contrast between the two contradictory propositions "Mary arrived" and "Mary did not arrive" but rather by the contrast between the feelings of the subject of the main clause "Peter" and the speaker's attitude toward this feeling. In other words, (30)(a) has the following straightforward paraphrase: "Peter believes that Mary arrived and is happy about that, though the speaker thinks that he should not be happy, since his belief is wrong: Mary did not arrive." (31)(a) can be interpreted in a similar fashion: "Peter believes that Mary arrived and is angry that she arrived; the speaker thinks, however, that there is no reason for his being angry, since Mary in fact did not arrive." Such an interpretation works neatly if one has emotions. It does not work, however, if the subject of the main clause has no emotions. On one reading /and I would claim that this is the preferred reading/ "Peter is not happy" does not describe any emotional state of "Peter". Similarly, "Peter is not angry" does not say anything of what kind of feelings "Peter" has. This explains why "but" cannot be used in these sentences; there cannot be any contrast between "Peter's feelings" and the speaker's attitudes toward these feelings simply because nothing is stated about Peter's feelings. We cannot go into further details of this problem here. Suffice it to say that in Hungarian

emotive factives can be kept apart from the cognitive factives by quite a few interesting properties which only emotive factives have.

For example, emotive factives can /as can many other verbs in Hungarian/ be accompanied by a so-called pronominal substitute. Thus, we may have

- (33) Péter örült annak, hogy Mária megérkezett.
lit. "Peter is happy (about that) that Mary arrived"

- (34) Péter haragszik azért, hogy Mária megérkezett.
lit. "Peter is angry (about that) that Mary arrived" ^{17/}

The form of the pronominal substitute depends on the surface case required by the verb (on the rection of the verb). The post-verbal position is not the only possible position of the pronominal substitute, however. Alongside of (33) we may also have:

- (35) Péter annak örül, hogy Mária megérkezett.
(36) Péter azért haragszik, hogy Mária megérkezett.

Now the factive presupposition can no longer be negated in (33)-(34). On the other hand, (35) behaves exactly like (32) and (36) exactly like (37):

- (37) Péter haragszik, hogy Mária megérkezett.

Thus, the following holds:

- (38) +Péter örül annak, hogy Mária megérkezett, pedig Mária nem érkezett meg.
(39) +Péter haragszik azért, hogy Mária megérkezett, pedig Mária nem érkezett meg.
(40) Péter annak örül, hogy Mária megérkezett, pedig Mária nem érkezett meg.
(41) Péter azért haragszik, hogy Mária megérkezett, pedig Mária nem érkezett meg.

This seems to indicate that sentences (33) and (34) are unambiguously factive. At this point we may now link up our observations with the "topic"- "comment"-structure of these sentences. We have already said that the "topic"- "comment"-structure of a sentence can best be accounted for by a question-answer pair where the answer is the sentence under consideration. Let us therefore ask appropriate questions about the sentences (33)-(36).

- (42) What is Peter's reaction to the fact that Mary arrived?
- (43) Why is Peter happy? (in Hungarian: Minek örül Péter?)
- (44) Why is Peter angry? (in Hungarian: Miért haragszik Péter?)^{18/}

Now, (33) and (34) can only be answers to (42), (33) can never be thought of as an answer to (43) and (34) never as an answer to (44). On the other hand, (35) is an appropriate answer to (43) and (36) and an appropriate answer to (44). From this we may conclude that in (33) and (34) "Mary arrived" is part of the "topic" and in (35) and (36) part of the "comment" of the sentence. Thus, the position of the pronominal substitute may indicate the "topic"- "comment"-structure of sentences in Hungarian.^{19/}

The fact that "Mary arrived" is part of the "topic" in (33) and (34), may explain why the sentences (38)-(39) are wrong. The "topic" of the sentence is per definitionem that part of the sentence that is known to the participants of the dialogue. By answering with (33) to a question like (42) one accepts the presupposition that "Mary arrived". On the other hand, this presupposition is part of the "comment" in (35)-(36). Given the ambiguity of emotive predicates, the fact that "Mary arrived" is part of the "comment" does not commit the speaker to the truth of this presupposition. He may just attribute it to the beliefs of the subject of the main clause, i.e. to "Peter".

Notice that sentences like (33)-(34) may have the following variants:

- (45) (a) Péter annak, hogy Mária megérkezett, örült.
 (b) Annak, hogy Mária megérkezett, Péter örült.
 (c) Hogy Mária megérkezett, annak Péter örült.

In all these cases the pronominal substitute is no longer optional: the sentences (46) are ungrammatical:

- (46) (a) +Péter, hogy Mária megérkezett, örült.
 (b) +Hogy Mária megérkezett, Péter örült.

Notice, furthermore, that all the sentences in (45) may have only a factive reading.

The phenomenon described above is not a particular feature of Hungarian. It can be found - at least to some extent - in many other languages. The following two German sentences have two different "topic"- "comment"-structures:

- (47) (a) Peter ist froh darüber, dass Anna angekommen ist.
 (b) Peter ist darüber froh, dass Anna angekommen ist.

To sum up, we may tentatively stipulate the following generalization:

If Pr_f is a factive predicate that is ambiguous between a factive and a non-factive reading, then Pr_f will be unambiguously interpreted factively if and only if the that-clause belongs to the "topic" of the sentence.

Let L be a language which has a system of pronominal substitutes Prs with the following properties: /a/ Prs is optional, /b/ Prs can occupy various positions in the sentence. It is likely, then, that Prs will be an indicator of the "topic"- "comment"-structure of complex sentences in L .

5.2. Emphatic sentences always require a specific context. As I have argued elsewhere,²⁰ the typical context for emphatic sentences is something like (48):

- (48) (a) Peter has passed the exam.
 (b) It was not Peter who has passed the exam, it was John.
 or,

It was John who has passed the exam and not Peter.

The Hungarian equivalents of these sentences are given under (49):

- (49) (a) Péter levizsgázott.
 (b) Nem Péter vizsgázott le, hanem János.
János vizsgázott le, és nem Péter.

Nevertheless, it is possible to consider the (b)-sentences of (48) and

(49) as answers to questions, namely to the question 50:^{21/}

- (50) Ki vizsgázott le?
"Who has passed the exam?"

In (49) it is not disputed that somebody has passed the exam, the only question concerns the person or persons who have done it. The emphatic constituent is always identical with the answer to a question like (50). Consequently, the emphatic constituent is always the "comment" of the sentence, the rest of the sentence being the "topic" of the sentence. The presupposition of emphatic sentences is exactly the presupposition characteristic of question-answer pairs. In other words, (49)(b) carries the presupposition that "somebody has passed the exam".

Let us now consider the following sentences:

- (51) (a) Anna főzte meg az ebédet.
"It was Anna who prepared the dinner"
(b) Az ebédet főzte meg Anna.
"It was the dinner that Anna prepared"
- (52) (a) Péter vitte el az újságot.
"It was Peter who took the newspaper"
(b) Az újságot vitte el Péter.
"It was the newspaper that Peter took"

These sentences can be analyzed as follows. In (51)(a) "Anna" is the "comment" and "prepared the dinner" is the "topic". The sentence presupposes that "somebody prepared the dinner". From this it follows that the definite noun phrase "the dinner" carries here the presupposition that "the dinner is prepared". The negation of (51)(a) refers to "An" and leaves the rest of the sentence unaffected ("Nem Anna főzte meg az ebédet"). On the other hand, in (52)(b) "the dinner" is the "comment" and the rest of the sentence is the "topic". The sentence carries the presupposition that "Anna prepared something". The negation affects "the dinner" and this noun phrase does not seem to carry any existential presupposition in this case. In (52)(a) "Peter" is the "comment" and "took the newspaper" the "topic". The sentence is associated with the presupposition that "somebody took the newspaper". Hence the noun phrase "the newspaper" carries here an

existential presupposition. On the other hand, in (52)(b) "the newspaper" is the "comment" of the sentence and the rest of the sentence the "topic". The sentence carries the presupposition that "Peter took something". The negation affects "the newspaper". Yet the definite noun phrase "the newspaper" seems to be associated here with an existential presupposition. Once again, we may observe the different behavior of "objects of result" and "objects of direction" with respect to presuppositions. The facts stated above square with those observed in connection with the "theme"- "rheme"-structure of sentences. However, the presuppositional behavior of these two types of objects is due to different reasons in the case of "topic"- "comment" and in the case of "theme"- "rheme", as can easily be gathered from the above discussion.

In sum, the two principles (A) and (B) formulated in connection with the articulation of sentences into "theme" and "rheme" hold with equal force in the case of the "topic"- "comment"-articulation.

NOTES

- 1/ As far as I can see, the first observation to this effect has been made by Strawson 1964. Dahl 1974 makes also mention of this relation. It should be made clear that there are cases where the sentences do not exhibit any "topic"-"comment"-structure (or "theme"-"rheme"-structure, for this terminology see below). In this paper I shall leave aside the neutral description case completely.
- 2/ By presuppositional structure of a sentence S I simply mean the /logical/ presuppositions of S.
- 3/ For this notation and an insightful discussion of the consequences of this notation see Dahl 1974.
- 4/ This problem has also been touched upon in Dahl 1974.
- 5/ Cf. Keenan and Hull 1973.
- 6/ It should be made clear that Keenan and Hull do not account for all types of questions. In particular, the Keenan-Hull-notation does not cover the case where the question concerns the verb (and not an NP) of the sentence. Thus, in order to account for the "topic"-"comment"-relation, we need a much more elaborated system than that proposed by Keenan and Hull.
- 7/ This, as it stands here, is of course, a commonplace statement. Notice, however, that - so far as I know - the question of word order has not been investigated in detail under the assumption that "theme"-"rheme" and "topic"-"comment" are two different relations.
- 8/ The dotted line indicates "what the sentence is about" and underlining indicates "new information".
- 9/ The "ˊ" indicates the main stress of the sentence.
- 10/ This rule will be revised later on.
- 11/ Cf. Kripke 1972.
- 12/ This sentence, as many others, may be considered as being ambiguous between internal and external negation. However, if interpreted with external negation, it would be more natural to say
 Peter nem adhatja el az autóját, hiszen nincs is autója.
 "Peter cannot sell his car, since he does not have any car".
- 13/ For the attributive and referential interpretation of definite descriptions cf. Donnellan 1971.
- 14/ This distinction has already been made by Kiparsky and Kiparsky.
- 15/ The English translation of the above Hungarian sentence could perhaps also be rendered by "Peter is happy that Mary arrived though Mary did not arrive". I think, however, that the interpretation given to these sentences below does not work for this English sentence either.

- 16/ Notice, incidentally, that one might predict on the basis of the presuppositional ambiguity of sentences like (32) that this ambiguity vanishes if the subject of the sentence and the speaker are the same. This prediction is borne out by the facts, the following sentence is not ambiguous:
- Örülök, hogy Mária megérkezett.
 "I am happy that Mary arrived"
- The factive presupposition cannot be negated here.
- 17/ The dotted line indicates the pronominal substitute here. The rough English translation of this pronominal substitute is given in parenthesis.
- 18/ Notice that the question word in Hungarian changes according to the rection of the verb: "minek" corresponds to the pronominal substitute "annak" and "miért" to the pronominal substitute "azért".
- 19/ There are, of course, other possibilities as well, for example, stress.
- 20/ For a detailed discussion of emphatic constructions in Hungarian see Kiefer 1967, and for some general problems of emphasis Kiefer 1970.
- 21/ This is to say that a context like (49)(a) or a question like (50) result in exactly the same "topic"-comment"-structure.

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A NOTE ON FACTORS AFFECTING THE POSITION OF ACCUSATIVE OBJECTS
AND COMPLEMENTS IN AELFRIC'S CATHOLIC HOMILIES I

1. INTRODUCTION

1.1. Aelfric and Old English word order. A distinction is traditionally made between three major patterns of OE word order: (1) The contact pattern (SV/SvV), where the subject is immediately followed by the finite verb, is becoming the dominant pattern in main clauses and gaining ground in dependent clauses. The OE idiom SneV in negation clauses, and the Sv...V pattern (where the clause is concluded by a non-finite verb) are taken as variants of the SV order. (2) The transposed pattern (S...V), where the verb stands at the end of the clause, probably represents the old IE word order. At the time when Aelfric was writing (around 1000 A.D.), the pattern is still common in dependent clauses. It also occurs in main clauses as a diachronically recessive pattern giving way to the SV order. The verb-medial transposition (S..V..) is a variant of this pattern showing the movement of the verb in an intermediate stage. (3) Inversion (VS) is almost exclusively restricted to main clauses where it occurs both in questions and commands, and in declarative clauses introduced by some modifier. Another distinction is made between clauses introduced by and or ac and other main clauses. In and/ac clauses, there is generally less inversion and the verb has a tendency to take a sentence-final position. As these features are typical of dependent clauses, they are indicative of the vacillating status of these conjunctions in OE. (Kuhn 1933:62-65; Mitchell 1968; Smith 1971.) In the following examples, (1) has the SVAO order, (2) patterns SVOA/AVSC/SvAOAV, and (3) patterns SOVA/SAV:

- (1) He hylt mid his mihte heofonas and eorðan (8,28).
'He holds heaven and earth with his might.'
- (2) þonne is oferreo heofenas mid wolcnum...., þonne beo ic gemyndig mines weddes, þæt ic nelle heonan-forð mancynn mid wætere adrencan (22,11). 'When I cover heavens with clouds...., then I shall be mindful of my covenant that I will no more drown mankind with water.'
- (7) Abraham hine astrehte eallum limum to eorðan, and God him to cwæð (90,25) 'Abraham stretched himself with all his limbs to the earth, and God said to him.'

In his study of word order in Aelfric's Catholic Homilies and Lives of the Saints, Barrett (1953) divides main clauses into those with and those without an introductory modifier. He finds that in the latter inversion is rare but quite common in clauses introduced by some modifier. Barrett's statistics are, however, inaccurate as he does not keep different kinds of sentence elements apart, but groups objects, complements and adverbs together. Further, he also classes and/ac clauses together with main clauses (p.2). It therefore seems desirable to supplement Barrett's studies with more delicate classifications of the material.

1.2. Information structure and word order. The present paper adopts a text-linguistic approach: clauses are seen as part of the context, textual and situational, their task being to transmit their share of the information of the whole text. Clauses have both grammatical and information structure. The former (basic syntax) has subject, predicate, object etc as its basic units, while the units of the information structure are theme and rheme. Information structure establishes a relationship between what is being said and what has already been said in the discourse and arranges the sentence elements according to the communicative intentions of the speaker. There is an interplay between the two structures: information structure operates within the limits set by basic syntax. These limits are dependent on the structure of the language. Some languages, or different stages during the development of the same language, allow for more freedom of thematic movement. Thus, for example, the Old English OVS order in

- (4) ac þæt fæsten tælð God (180,9). 'but such fasting is reproved by God.'

would not be possible in MnE basic syntax, but the same thematic order can be expressed by passivization. This makes it possible to keep in the theme the given OE object fæsten.

In this example, given information is placed first to constitute a starting-point for communication. What is given or known information can be inferred on the basis of (1) the textual environment, (2) the speech situation, and (3) the common stock of knowledge shared by the speaker and the listener (pragmatic reference). New, or contextually independent information, on the other hand, refers to elements not mentioned in the preceding context, or it refers to the establishment of a new theme-rheme nexus by relating to the theme such information to which it has not been previously related. Such information normally tends to be placed towards the end of the clause. In the marked, emotive case, on the other hand, the speaker may wish to begin the clause with new information, with something that is topmost on his mind, whereby the theme comes to contain new information. (Cf. Halliday 1967; Kirkwood 1970; Sgall 1974; Daneš 1974; Chafe 1970; Enkvist 1975.)

1.3. Purpose of the study. The purpose of this paper is to examine factors affecting the placement of accusative objects and complements in OE, as represented by Aelfric. On the basis of the above discussion (cf. also the "Prolegomena" by Enkvist, in this volume), the following factors will be considered: (1) word order in different types of clauses (main, and/ac and dependent clauses), (2) the influence on word order of initial adverbial modifiers and objects or complements, (3) in dependent clauses, distinction between subject and object, attributive (relative), and adverbial clauses, (4) influence of the properties of the verb, whether auxiliary or full verb, (5) length of the subject, (6) length of objects, complements and adverbial modifiers, and (7) expression of thematic order, in terms of the given/new distinction in subjects, objects, complements and possible adverbial modifiers.

1.4. Analysis of the corpus. The text chosen for the analysis represents Aelfric's normal, non-alliterative prose, homilies actually preached to layman audiences. To make the material more homogeneous, only declarative sentences were considered. Clauses functioning as questions, commands and exclamations were thus excluded. The corpus analysed (98 pages, or 32 per cent out of the First Series of Catholic Homilies) had a total of 2,254 clauses: 764 main clauses, 527 and/ac clauses and 963 dependent clauses. This paper, however, will only discuss the clauses with accusative objects and complements. Adverbial modifiers were considered only insofar as they occurred in clauses with objects and complements.

The "givenness" of subjects, objects, complements and adverbial modifiers was analysed using a four-point scale: (1) pronominal reference to a preceding noun, (2) repetition of, or a synonym or antonym for, a preceding element, (3) uncertain cases in which it was difficult to decide whether or not the idea expressed by a lexical element was "known" to Aelfric's audience, and (4) "new" information, which was inferred by eliminating the linguistically definable "given" information and those uncertain cases included in group (3). Thus, for example, in (5), which constitutes the beginning of a homily, the classification of the nominal elements is given in the brackets after each word:

- (5) Se Hælend (2) ferde ofer ða Galileiscan sæ (3),
 þe (1) is gehaten Tyberiadis (4), and him (1)
 filigde micel menig (4), forðon þe hi (1) be-
 heoldon ða tacna (4) þe (1) he (1) worhte ofer
 ða untruman men (3) (180,31ff). 'Jesus went over
 the sea of Galilee, which is called Tiberias, and
 was followed by a great multitude, because they
 had seen the miracles which he had made among the
 diseased men.'

This example also illustrates problems of classification. Jesus was mentioned in the Latin passage preceding this translation into OE, and was obviously known to the audience. So were probably also the sea of Galilee and the diseased men in the biblical story, but these were classified here as "uncertain", whereas Tiberias, great multitude and miracles were classified as new information.

The data processing was done on computer (Univac 1108) using a library programme ("HYLPS") suitable for the purpose. For the computer analyses, the classifications were coded as numbers (e.g., in columns 11-12, 1=SV0, 2=OSV, 3=SOV, 4=VSO, etc.) and punched onto cards. The computer was programmed to cross-tabulate any two columns. Thus, for example, to study the influence of "givenness" on the position of the objects, the computer cross-tabulated columns 11-12 (word order patterns) and 13 (givenness of object, the above classes 1-4). Chi-square tests were used occasionally as measures of dependence between some of the factors studied and the observed word order patterns.

2. RESULTS

2.1. Type of clause. The frequencies of the basic word order patterns (SV/ S...V/ VS) in clauses with accusative objects and complements are given in Table 1, with separate data for (1) main clauses, (2) and/ac and (3) dependent clauses.

Table 1. Basic word order patterns in clauses with accusative objects and complements.

accusative objects	SV		S...V		VS		T
(1) main clauses	218	54%	52	13%	132	33%	402
(2) <u>and/ac</u> "	90	60%	55	37%	4	5%	149
(3) dependent "	241	42%	340	58%	2	-	583
T	549		447		138		1134
complements:							
(1) main clauses	154	68%	5	2%	69	30%	228
(2) <u>and/ac</u> "	53	90%	3	5%	3	5%	59
(3) dependent "	143	62%	87	37%	3	1%	233
T	350		95		75		520

These figures show that there were great differences between main, and/ac and dependent clauses, both in accusative object and complement patterns. These clauses should thus be considered as different types of clauses. Similarly, the results show great differences between the accusative object and complement patterns within the same type of clause.

In main clauses, there were two major forces at work: a tendency for inversion after some introductory modifier (cf. section 2.3.), and the counterbalancing tendency for the SV order to gain ground. Transposition was a diachronically recessive pattern and had practically disappeared in the complement patterns in this corpus (only 2 per cent). This is probably because the copula was felt to be too light at the end of main clauses. In dependent clauses, on the other hand, S...V still had high frequencies. It is interesting to note that the verb had a clear tendency to give up its end-position in complement patterns, probably under a pressure of analogy from main clauses. Inversion is virtually non-existent in dependent clauses. There was thus a choice only between SV and S...V, the latter still having higher frequencies in the accusative object patterns. And/ac clauses had a vacillating status between the two: less inversion and more transposition than in main clauses.

2.2. Influence of initial modifiers/objects/complements. Out of the 764 main clauses in the corpus, 366 (i.e., 48 per cent) had some adverbial modifier, the negation particle ne, or an object or complement at the beginning of the clause. There was a clear difference in word order between these clauses and those not having any such introductory elements, as seen in the following frequencies:

	no initial modif./O/C		some initial modif./O/C		T	
SV	363	91%	108	30%	471	62%
S...V	33	8%	16	4%	49	6%
VS	2	1%	242	66%	244	32%
T	398		366		764	

Inversion was thus very rare in main clauses not introduced by some initial modifier. Such cases of inversion seemed to be marked, as in (6), which had a persuasive function. A closer examination of the introductory elements showed that relatively inversion occurred most frequently after an initial negation particle ne, where the preposing of ne also resulted in a marked word order (7). Inversion after short, one-word adverbs was frequent, but its effect was less marked (8). Longer initial adverbs, on the other hand, tended to be followed by the SV (9) rather than the VS order (10):

- (6) Is hwæðere ... ælc lichamlice gesceaft ... fulre
and mægenfæstre on fullum monan þonne on gewanedum
(102,20). 'Every bodily creature ... is, how-
ever, ... fuller and stronger in full moon than
in decrease.'
- (7) ne mæg he nane gesceafta gescyppan (16,20) 'he
[the devil] cannot create any creatures.'
- (8) Ða nam þæt Iudeisce folc micelne endan ongean his
lare (26,21) 'The Jewish folc then showed a great
envy of his doctrine.'
- (9) Eac on ðisum dæge he awende wæter to æðelum wine
(104,27). 'On this day also, he turned water to
noble wine.'
- (10) For ðisum prym ðingum is ðes freols-dæg Godes
swutelung gecweden (104,29). 'For these three
reasons this festival is called the Manifestation
of God.'

To contrast more explicitly the two contact patterns SV and VS, the S...V clauses (N=16) were excluded from the following statistics showing

the frequencies of clauses with these initial elements:

initial element	SV	VS	T
(1) one adv modifier	39 23%	132 77%	171 49%
(2) more than one adv	20 (65%)	11 (35%)	31 9%
(3) negation particle ne	3 5%	54 95%	57 16%
(4) acc & dat obj, complement	46 51%	45 49%	91 26%
T	108 31%	242 69%	350 100%

An analysis of the length of the subject showed that inversion after introductory elements depends largely on the weight of the subject (cf. section 2.6. below).

In complex sentences, there was a high rate of inversion in main clauses preceded by an adverbial clause. These cases can be compared with inversion in clauses introduced by some adverbial modifier. The frequencies of these clauses are included in the above statistics. A separate analysis of them gave a total of 100 main clauses preceded by an adverbial clause. The rate of inversion in them was as high as 76 per cent. About half (54 per cent) of these sentences had the "correlative" pattern (e.g., bonne ... bonne as in (2) above, or pa ... pa, as in (11)):

- (11) *ðaða hi to ðam cilde gecyrðon, þa gesawon hi eft*
ðo: e steorran (108,24). 'When they [the Magi]
 returned to the child they again saw the star.'

In these sentences, the former (dependent) clause typically has the S...V order, and the latter (main clause), inversion. This word order can be regarded as a grammatically fixed pattern in these clauses.

In comparison with main clauses, the transportability of modifiers to the initial position is much more restricted in and/ac and dependent clauses. Only 14 per cent out of the and/ac clauses with overt subjects (i.e., 36 out of 260) had some introductory adverbial modifier or object or complement. These clauses contained all the cases of inversion observed in the and/ac clauses (15 out of 36, or 42 per cent). In dependent clauses, only seven cases of introductory adverbial modifiers were recorded (i.e., less than 1 per cent out of the total of 963). (12) is an example of such a shift:¹

¹ It is interesting to note that the preposing of the time adverb in this example is in accordance with Hooper's and Thompson's (1973) observations on root transformations in Modern English.

- (12) Lucas se Godspellere awrat on Cristes bec, þæt on ðam timan se Romaniscra casere Octavianus sette gebann, þæt ... (28,30) 'Luke the Evangelist wrote in the book of Christ that at that time the Roman emperor Octavian made a proclamation that ...'

A closer analysis of the adverbial modifiers falls outside the scope of the present paper. An examination of the givenness of the initial adverbs showed, however, that they were typically given or known elements.¹ This would indicate that their shift to this position was motivated by thematic considerations, the tendency to begin the clause with a given element that links it to the preceding context. The position of objects and complements in relation to the adverbial modifiers will be analysed in section 2.9.

2.3. Type of dependent clause. The dependent clauses were classified into (1) subject and object, (2) attributive (relative) and (3) adverbial clauses. A distinction was also made between restrictive and non-restrictive relative clauses (cf. (5) for the attributive clauses, (2), (5) and (11) for adverbial clauses, and (12) for an object clause). The basic word order patterns in dependent clauses are given in Table 2. These figures include all the object and complement clauses.

Table 2. Basic word order patterns in dependent clauses.

	SV		S...V		VS		T	
(1) subj & obj clauses	111	51%	103	48%	2	1%	216	23%
(2) adverbial clauses	204	46%	233	52%	8	2%	445	46%
(3) attributive "	133	44%	168	56%	1	-	302	31%
T	448	47%	504	52%	11	1%	963	

The proportion of SV in subject and object clauses was slightly higher, but the chi-square test ($\chi^2 = 3.03$, $df = 4$) showed that the differences are not statistically significant. Similarly, the difference between restrictive and non-restrictive relative clauses was very small: the percentages of SV were, respectively, 45 and 43 per cent. Consequently, the type of the dependent clause is not a significant factor, as far as the order SV/S...V is concerned.

¹ In main clauses, the percentage of "given" initial adverbs was as high as 146 out of 175 = 83%. In and/ac clauses 11 out of the 15 initial adverbs were rated as given, and all the seven initial adverbs in dependent clauses were also given.

2.4. Properties of the verb. The corpus had a total of 397 auxiliaries, i.e., 18 per cent out of the 2,254 clauses analysed had some auxiliary. Of these the biggest groups comprised wesan 'be' and the modal auxiliaries (25 and 61 per cent, respectively). In main clauses, the major patterns with auxiliaries were SvVX (26 per cent), SvXV (25 per cent) and vSXV (27 per cent, out of the total of 138), these three patterns accounting for 78 per cent of all the auxiliaries employed in main clauses.¹ The major patterns in dependent clauses were as follows: SvXV (45 per cent), SvVX (29 per cent) and SXVv (18 per cent, out of the total of 187), comprising 92 per cent of auxiliaries in them. Auxiliaries were thus typically drawn next to the subject, but the result was not always the SvVX order. The main verb frequently stood at the end of the clause (patterns SvXV and vSXV).² It is noteworthy, further, that dependent clauses had nearly a fifth of the auxiliaries to the right of the main verb (SXVv), while only one such case was recorded in main clauses.

An attempt was made to classify the main verbs semantically into four groups: (1) state verbs of having and being, (2) verbs expressing perception and cognition, (3) verbs of transitional events and processes, and (4) verbs expressing action or activity.³ These verbs were examined in three positions: (1) immediately to the right of the subject, (2) at the end of the clause and (3) in the inversion patterns.⁴ The results showed virtually no difference between the "process" and "activity" verbs,

1 The "X" is used to refer to patterns that include both objects and complements, while SVO and SVC refer only to objects and complements.

2 The movement of the auxiliary immediately after the subject can be regarded as an intermediate stage of the development towards the SV order. It is possible that this development went through SXVv -- SXvV -- SvXV to SvVX.

3 Examples of these classifications are: (1) wesan 'be', hatan 'be called', tellan 'reckon, regard', getacnian 'betoken, signify'; (2) gescon 'see', točanwan 'know', gehyrian 'hear', gelican 'please'; (3) weorðan 'become', gefeornian 'confirm', alysan 'redeem', forleosan 'lose', gesweftan 'cause to sleep', acwellan 'kill', ateowian 'appear'; (4) gearcian 'prepare', gehyrsumian 'obey', gegaderian 'gather', gebiddan 'pray', wiðstandan 'resist', lufian 'love', secgan 'say'.

4 The "SV" pattern includes the frequencies for SVX, XSV and SvVX; the "S...V" order those for the verb-final cases (SXV, SvXV, vSXV and SXVv), and "VS" includes XVS, AVX and VSX. Minor patterns were excluded. The frequencies cover 96 per cent of the verb patterns in main clauses and 97 per cent in dependent clauses.

as classified in the present paper. This may also reflect difficulties involved in classifying OE verbs into semantic categories; often it was hard to draw a line between them (cf. examples given). There was, however, a clear difference between the placement of the "state" verbs and the rest of the main verbs, and so these combined frequencies are given here:

	main clauses					dependent clauses				
	"state"		full vb		T	"state"	full vb		T	
(1) "SV"	207	72%	223	50%	430	178	61%	229	36%	407
(2) "S...V"	12	4%	109	25%	121	116	39%	416	64%	532
(3) "VS"	69	24%	113	25%	182	(excluded)				
T	288		445		733	294		645		939

In main clauses, "state" verbs were thus typically placed immediately to the right of the subject, and they avoided the sentence-final position. The tendency was similar in dependent clauses, with a majority of 64 per cent of full verbs taking the end-position.

As the end-position seems to be an important factor with respect to the behaviour of the verb in the different types of clauses, a closer analysis was made of the verbal element at the absolute sentence end. A distinction was made in this analysis between finite and non-finite full verbs, while copulas and auxiliaries were now classed together. Examples of non-finite verbs in end-position are given above in (2), (7) and (10), and of the finite verb in (3) and (11); (13) and (14) are examples of auxiliaries, and (15) of a copula in this position:

- (13) ... ðaða he hi gesceapene hæfde (14,1^r) '... after he had created them.'
 (14) ... and smeade hu he hi forðon mihte (16,31)
 '... and meditated how he might destroy them.'
 (15) ... and to mannum spræcon swilce hi godas wæron
 (22,35) '... and spoke to men as if they were gods.'

The frequencies of the verbs in the absolute sentence end were as follows:

absolute end:	main cl		and/ac cl		dependent cl	
copula/auxiliary	5	5%	6	3%	105	19%
finite full verb	35	33%	144	76%	360	66%
non-finite full vb	67	62%	39	21%	81	15%
T	107/764		189/527		546/963	
	= 14%		= 36%		= 57%	

In main clauses, the verb occupied the end-position only in 14 per cent out of the total of 764 clauses, and it was most frequently the non-finite full verb (patterns SvXV and vSXV). In dependent clauses, on the other hand, the clause was concluded by some verbal element in more than half of the cases. It is interesting to note that the proportion of non-finite full verbs was only 15 per cent (SvXV). The verb was thus typically a finite one (SXV, in 82 per cent out of these 360 verbs, and OSV in 17 per cent). The higher proportion of copulas and auxiliaries in the absolute end-position (19 per cent, patterns SCV and SXV_v) is indicative of the pressure for transposition in dependent clauses, regardless of their lighter rhythmical quality. It should be noted that the SCV pattern contradicts the traditionally accepted principle of end-weight in OE.

2.5. Length of the subject. In main clauses, a distinction was made between clauses introduced by some adverbial modifier or object/complement and those not having such initial elements (cf. section 2.3.). In the latter (N = 398), the only variation was between the SV and S...V patterns, and the length of the subject does not seem to be important in the choice between them. In clauses introduced by ne, inversion was nearly a fixed pattern and took place without regard to the length of the subject. The length of the subject was therefore studied more closely in clauses introduced by (1) one adverb, (2) two or more adverbs and (3) some object or complement. A cross-tabulation of the SV and VS patterns in these clauses against the length of the subject (whether one-word subject or two or more words) gave the following results:

initial element	1-word subject				≥2-word subject					
	SV		VS		SV		VS			
(1) one adv modifier	28	26%	78	74%	106	11	17%	54	83%	65
(2) more than one "	19	(79%)	5	(21%)	24	1	(14%)	6	(86%)	7
(3) obj or compl	42	74%	15	26%	57	4	(12%)	30	(88%)	34
T	89	48%	98	52%	187	16	15%	90	85%	106

The total frequencies show that longer subjects had a strong preference for the end-position (VS) in these clauses. With one-word subjects, the total frequencies show no such dependence on the length of the subject. However, if one looks into the rhythmical quality of the initial element, there is a clear difference. In clauses introduced by an object or complement, or by longer adverbial modifiers, the preferred order was AASV (cf. (9)) and

OSV (cf. (23)), i.e., the rhythmically light subject (frequently a pronoun) took the weakly stressed, enclitic position after the introductory element. In clauses introduced by a short adverbial modifier, as in those introduced by *ne*, there was no such dependence of word order on the length of the subject. Consequently, inversion in these clauses can be regarded as a grammatical feature that is independent of constituent weight.

2.6. Length of the accusative object and complement. Accusative objects and complements were classified into three groups according to their length (1, 2, and 3 or more words), and these were cross tabulated against their positional classification (initial, medial, end). In main clauses, the contingency table was as follows:

(main cl)	1 word		2 words		≥ 3 words		T	
(1) initial	21	16%	11	7%	9	8%	41	10%
(2) medial	46	36%	24	15%	9	8%	79	20%
(3) end	61	48%	121	78%	100	84%	282	70%
T	128		156		118		402	

The chi-square value computed from this table ($\chi^2 = 64.60$; $df = 4$, $p < .1\%$) showed a significant dependence between the length and the position of the accusative objects in main clauses: there was a tendency to place shorter objects initially or medially, while longer ones were clearly moved towards the end. Dependent clauses showed higher percentages of longer objects in medial position. There was, however, a similar tendency for objects of three or more words to take the end-position: out of the 106 objects in this group, 54 per cent took the end-position, and 45 per cent were placed medially.

The results were similar in clauses with complements: longer complements tend to take the end-position, and this tendency also holds in dependent clauses, as seen in the following frequencies:

(dep. cl)	1 word		2 words		≥ 3 words		T	
(1) initial	1	1%	1	2%	1 (3%)	3	1%	
(2) medial	64	51%	23	33%	8 (20%)	95	41%	
(3) end	59	48%	45	65%	31 (77%)	135	58%	
T	124		69		40		233	

The proportion of one-word complements before and after the copula was about fifty-fifty, but longer complements tended to take the end-position and thus send the copula next to the subject.

2.7. Givenness of the subject. The subjects were analysed in terms of the given/new distinction (cf. 1.2. and 1.4. above), and the results were cross-tabulated against three positional categories: (1) initial subjects (SVX, SXV), and those in (2) medial (XSV, VSX) and (3) end-position (XVS). The results showed that 86 per cent of the subjects in main clauses conveyed given or known information and only 8 per cent new information. Given subjects were typically placed initially or medially, but new subjects occasionally occurred in these positions. As a clear majority of the subjects were initial and conveyed given information, this means that the information structure and basic syntax largely overlapped in the present corpus, as in Modern English: normal, thematically unmarked utterances usually begin with given or known elements, and in a majority of cases these elements are placed into the grammatical role of the subject. It is interesting to note that the XVS pattern contained about as many given as new subjects (22 and 17 cases, respectively). This means that the given/new distinction in subjects probably was not a major cause of inversion; rather, inversion seems to depend on the givenness of the object and the length of the subject.

In dependent clauses, naturally, a vast majority of subjects were pronouns referring to an antecedent or some other noun in the matrix clause (77 per cent, out of 963), and 18 per cent of the subjects were synonymous. The proportion of new subjects was as low as 3 per cent (33 out of 963). Similarly, in and/ac clauses, the percentage of given subjects was 89, and that of new subjects, 7 per cent (18 out of 260).¹

¹ It is perhaps surprising that the percentages of "new" subjects were so low. This is partly due to the subject matter of the present corpus which favours a style dominated by what e.g. Daneš (1974) has called thematic progression with a continuous theme, i.e. series of utterances share the same theme. In some cases, new subjects were converted into agents by passivization (16). More frequently, however, passivization also seemed to depend on rhythmical considerations, as in (17) where a long, given subject was moved to the end. New information was often introduced by the passive and active VS constructions (18, 19). The origins of the MnE existential structure may be seen in clauses like (20), where *þær* still has a local meaning. A closer analysis of these patterns, however, falls outside the scope of the present paper.

(16) *Pus soðlice is awriten þurh ðone witegam Micheam (78,12).* 'Thus verily is written by the prophet Micah.'

(17) *Wearð þeah þæt wif ða forspanen þurh ðæs deofles lare (18,8).* 'The woman was then seduced by the devil's counsel.'

2.8. Givenness of accusative objects and complements. A similar classification of accusative objects according to givenness and sentence position gave the following results, in main, and/ac and dependent clauses.¹

Table 3. Givenness and position of accusative objects in main, and/ac and dependent clauses.

main cl	pron	synonymy	uncert.	"new"	T
(1) initial	19 21%	17 10%	5 (12%)	- -	41 10%
(2) medial	43 48%	26 15%	5 (12%)	5 5%	79 20%
(3) end	28 31%	130 75%	31 (76%)	93 95%	282 70%
T	90 23%	173 43%	41 10%	98 24%	402
and/ac cl					
(1) initial	3 6%	5 9%	2 (15%)	- -	10 7%
(2) medial	34 74%	15 26%	6 (46%)	6 (19%)	61 41%
(3) end	9 20%	38 65%	5 (39%)	26 (81%)	78 52%
T	46 31%	58 39%	13 9%	32 21%	149
dependent cl					
(1) initial	77 34%	4 2%	- -	- -	81 14%
(2) medial	146 65%	144 63%	35 61%	31 42%	356 61%
(3) end	3 1%	80 35%	22 39%	42 58%	147 25%
T	226 39%	228 39%	57 10%	73 12%	554

These results are interesting. They show that there was a clear dependence of the position of the accusative object on its givenness; the chi-square values computed from the contingency tables were all significant at the .1 per cent level.² In main clauses, initial objects comprised 10 per cent out of the total of 402 accusative objects. With a small margin of uncer-

- (18) On ðam ylcan dæge wurdon gebigede twelf ðusend
heðenra manna to Cristes geleafan (76,2). 'On the
same day, twelve thousand heathen were converted
to belief in Christ.'
- (19) Us is eac to witenne, þæt wæron sume gedwolmen ðe
cwædon... (110,6) 'We are to know also that there
were some heretics who said...'
- (20) Ða wæs þær, binnan ðære byrig Hierusalem, sum Godes
mann, and his nama wæs Symeon (134,29). 'Then
there was, in the city of Jerusalem, a man of God,
and his name was Simeon.'

1 The patterns were as follows: (1) initial position, OSV and OVS, (2) medial position, SOV, SvOV, vSOV, SOvV and SOvV, and (3) end-position, SVO, VS0, SvVO and vSVO.

2 The chi-square values were: main clauses 87.66 (df = 4), and/ac clauses 38.19 (computed for rows 2 and 3, df = 2), and dependent clauses 190.32 (computed for rows 2 and 3, df = 2).

tainty, they all contained given or known information, i.e., their placement was thematically motivated. Similarly, in *and/ac* and dependent clauses, all the initial objects were given or known. Examples of the OVS pattern have been given above in (4) and (5). In the examples below, (21) is a vivid description of King Herod's sufferings and contains inversion, as (22); (23) and (24) are examples of the OSV order.

- (21) ... buton yldinge him becom seo godcundlice
 wracu ... Hine gelæhte unasecgendlic adl ... Him
 was metes micel lust ... Him stod stincende steam
 of ðam muðe ... Hine geræhte singal slæpleast ...
 and gif he hwon hnappode, ðærrihte hine drehton
 nihtlice gedwimor (84,34ff). '... without delay
 the divine vengeance came upon him ... He was
 seized by an unspeakable disease ... He had a
 craving lust for food ... Stinking vapour pro-
 ceeded from his mouth ... He was afflicted by
 constant sleeplessness ... and if he dozed a little,
 he was immediately tormented by nightmares.'
- (22) Ealle ðas word spræc se Symeon be ðam cilde to
 ðam neofenlican Fæder (144,5). 'All these words
 about the child Simeon spoke to the heavenly
 Father.'
- (23) Bis he cweð to fandunge þæs leorning-cnihtes
 (182,7). 'This he said in order to prove the
 disciple.'
- (24) ðeahhwædere þa wundra þe Crist worhte, oðer ðing
 hi æteowdon purh mihte, and oðre ðing hi ge-
 tacnodon purh geryno (154,5). 'But the miracles
 that Christ made manifested one thing by power,
 and another thing they signified by mystery.'

As these examples show, given objects were fronted to improve the connection with the preceding context. In some cases the subjects conveyed new information, and their postponement was thus part of the speaker's strategy to begin an utterance with known information and conclude it with new (OVS; cf. 2.8. above). More frequently, however, the choice between OSV and OVS depended on the length of the subject. In the OSV pattern, 20 out of the 21 clauses had a rhythmically light one-word subject, frequently (17 cases) a pronoun. The OVS pattern (total of 15 accusative objects), on the other hand, had 11 two- or three-word subjects and 4 one-word subjects.

In the medial position, the objects were also typically given, and this is where most of the short pronoun objects went (cf. (13) and (14)).

New objects comprised about a fifth of the accusative objects in main and and/ac clauses, and 12 per cent of the objects in dependent clauses. They were typically placed to the right of the SV/VS elements. This tendency was very clear in main and and/ac clauses, while dependent clauses "tolerated" relatively more new objects also in medial position. There were thus two opposing forces in dependent clauses: the tendency for the new objects to move behind the verb, and the tendency for the verb to keep its end-position. In the present corpus, the tendency to postpone new objects was already gaining the upper hand.

In comparison with accusative objects, the percentages of "new" complements were clearly higher, as seen in the following totals for the main, and/ac and dependent clauses:

type of clause	given		uncert.		"new"		T
(1) main clauses	98	43%	9	4%	121	53%	228
(2) <u>and/ac</u> "	22	37%	5	9%	32	54%	59
(3) dependent "	134	57%	11	5%	88	38%	233
T	254	49%	25	5%	241	46%	520

In main clauses, given complements occurred both at the end (82%) and initially (12%). Out of the new complements, 86 per cent took the end-position, but 11 per cent were also placed initially. Some of these were, however, fixed-order quotations from the Bible ("Blessed are..."). (25) has a given initial complement (repetition of the rheme in the previous clause). (26) is an example of a "new" initial complement. In both cases, the longer nominal object, functioning as an antecedent of the following relative clause, is moved to the end-position. In (27), the initial complement was classified as "uncertain", and the weakly stressed pronoun subject took the enclitic position after it (CSV); the ac clause is an example of a given, but heavy complement taking the end-position:

- (25) Soðlice syððan was his byrgen gemet mid mannan
afylled. Manna was gehaten se heofenlica mete,
þe ... (76,15) 'Verily his grave was afterwards
found filled with manna. Manna was the name of
the heavenly food that ...'
- (26) Ydel bið se læcedom þe ne mæg ðone untruman ge-
hælan (60,33). 'Vain is the medicine that can-
not heal the sick.'
- (27) Lytel he was ðær gesewen, ac ðeah-hwædere he was
swiðe micel and ormete (138,3). 'He looked little
there [i.e., the Jesus child in Simeon's arms],
but he was, nevertheless, very great and infinite.'

No new initial complements were recorded in the and/ac and dependent clauses, in which nearly all complements (98% and 99%) were placed either medially or at the end. In and/ac clauses, new complements had a clear preference for the end-position (26 out of 32; cf. (20)). Dependent clauses showed a stronger tendency for the verb to stick to the end-position; 30 per cent (26 out of 88) of the new complements were placed medially, either SCV or SvCV.

2.9. Adverbial modifiers in relation to objects and complements.

Only those adverbial modifiers were considered that occurred in clauses having an object or complement. No distinction was made in these statistics as to the type of the adverbial, whether time, place, manner, etc. As the relative frequencies in the collocations object/complement + adverb were fairly similar in main, and/ac and dependent clauses, only total frequencies for all these collocations in the whole corpus are given.

The place of adverbial modifiers in relation to objects and complements was examined in medial and end-positions, which provided enough material for a consecutive placement of these elements (XA/AX). The givenness of the adverbials was classified on a three-point scale: (1) given/known cases, (2) uncertain cases, and (3) cases conveying obviously new information (cf. examples in section 1.4.).

In the medial position (S...V/Sv...V/vS...V), the given/new distinction of adverbials showed no clear tendency to either direction, whether SAXV or SXAV. This means that the medial position seems to be thematically relatively neutral, as suggested by Enkvist (1976, in this volume). The frequencies for the given and new adverbials (with "uncertain" cases excluded) in the medial position were as follows:

	given adv		new adv		T	
(1) adv precedes O/C (SAXV)	64	47%	22	44%	86	46%
(2) adv follows O/C (SXAV)	72	53%	28	56%	100	54%
T	136	73%	50	27%	186	

Neither did the length of the adverbial seem to have any clear influence on the mutual order of the constituents, apart from a slight tendency for the longer element to be placed before the shorter one. Similarly, an analysis of the object/complement element in this position gave no clear difference: the proportions of given and new objects/complements before and after the adverbial modifier were about the same.

In end-position (SV.../VS.../SvV.../vSV...), the differences were clearer in terms of these distinctions: the order SVXA/VSXA was observed by a majority of 83 per cent of the cases, as seen in the following contingency table:

			given adv		new adv		T
(1)	adv	precedes O/C (SV/VSAX)	40	22%	9	8%	49 17%
(2)	adv	follows O/C (SV/VSXA)	145	78%	102	92%	247 83%
T			185	63%	111	37%	296

Out of the new adverbial modifiers, 92 per cent followed the O/C element and took the absolute sentence-final position. One has to remember, however, that the "new" adverbs in the present corpus accounted for only 37 per cent out of the adverbials in end-position, i.e., a majority of them conveyed given or known information. The order XA/AX was thus affected by other factors, such as length of the constituent. This is seen in the following contingency table where the adverbs were classified into two groups on the basis of their length, those consisting of 1-2, and 3 or more words:

			adv 1-2		3-6 words		T
(1)	adv	precedes O/C (SV/VSAX)	35	23%	21	11%	56 17%
(2)	adv	follows O/C (SV/VSXA)	115	77%	165	89%	280 83%
T			150	45%	186	55%	336

As many as 89 per cent out of the adverbs rated as "long" (3 or more words) thus took the absolute sentence end. Consequently, these results support the principle of end-weight in OE (cf., e.g., (6) and (9)). As a majority of the adverbs in this position conveyed given information, the principle of end-weight cannot, however, be equated with the distribution of new information.

These results were confirmed by an analysis of the corresponding objects/complements in this position. Out of the given objects and complements, 84 per cent preceded the adverbial element (SV/VSXA). On the other hand, this position also included three fourths (94 out of 125) of the new objects/complements. It therefore seems that considerations of givenness were frequently overridden by the principle of end-weight: the end-position was occupied by longer and thus heavier adverbial elements, without regard to the givenness of the object or complement. It is likely that semantic factors (closer connection between the verb and the object) also contributed to the establishment of the SVXA order.

3. CONCLUDING REMARKS

It is a commonplace among students of OE syntax that word order in Old English was "relatively free", as part of the job of expressing syntactic relations was done by the inflectional system. This freedom of word order has, however, been frequently exaggerated (e.g., in Fries 1940). More recent work on the inflectional system shows that it was in a process of being levelled and thus largely incapable of signalling the necessary syntactic relations (cf., e.g., Saitz 1955 and Shores 1971). Word order thus gradually assumed syntactic functions to aid the making of the essential distinction between the subject and the object. Among others, Vennemann has recently (1973, 1975) suggested this principle of ambiguity avoidance to account for the shift of the verb from the end.

It is still true that the OE inflectional system, decayed though it was, gave word order a considerable margin of freedom for expressing thematic functions. This freedom was not, however, "free variation", but could be used for various communicative ends. Frequently, basic syntax and thematic structure overlapped, as they still do in MnE: thematically unmarked sentences normally began with given or known elements, and these were usually placed into the grammatical role of the subject (SVX, SXV). In nearly half of the main clauses, however, the initial position was occupied by some adverbial modifier or object or complement. The resulting OE word order was AVSX/ XVS in 66 per cent of such clauses, and these patterns would not be possible any longer, apart from some fairly rare cases. An analysis of these introductory elements showed that they typically conveyed given or known information. Their preposing would therefore seem to be motivated by thematic considerations, by the tendency to begin the clause with something that is known on the basis of the preceding context. Their communicative task was to constitute a starting point for the predication in the rest of the clause.

The present study showed a very clear difference in the basic word order patterns used in the main, and/ac and dependent clauses in the present corpus. The choice was largest in main clauses, where objects and complements could occur in all the possible permutations of the SVX pattern, the major patterns being SVX and VSX. In dependent clauses,

on the other hand, inversion was practically non-existent, and there was thus a choice only between two major patterns, SVX and SXV. And/ac clauses had a vacillating status between the two: they had clearly less inversion and more transposition (SXV) than main clauses. Similarly, the transportability of adverbial modifiers to the initial position was far more restricted in and/ac and dependent clauses. These results tally well with Vennemann's suggestions (1973, 1975). He thinks that the theme-rheme relation plays a more important role in main than in dependent clauses. Therefore there is no such need for thematic shifts in the latter. In the present corpus the same observation also applies to and/ac clauses. Vennemann suggests that the SXV order is the most natural serialization of the subject, verb and object. In this pattern, S is the theme, X the rheme, and the verb has only the semantic function of specifying the relation between them. If the inflectional system becomes inefficient, the verb assumes the additional syntactic function of separating the subject and object. As ambiguities will first arise in structures with nominal (that is, non-pronominal) objects, Vennemann predicts that the disambiguating move of the verb immediately to the right of the subject (SXV → SVX) should first take place in these structures. This prediction was confirmed by the results of this study, which showed that the objects preceding the verb were typically pronouns.

By and large, the present results thus accorded with the communicative principle of beginning the clause with known information and placing the new information towards the end. The results also supported the principle of end-weight: the sentence-final elements tended to be long and therefore heavy. In a large number of cases these two principles overlapped. Very frequently, however, the sentence-final constituent was given rather than new, and it occupied the end-position because of its weight. This probably explains why light auxiliaries and "state" verbs were first moved immediately to the right of the subject (SVX). It is interesting to note that the SvV order, which is in accordance with the SVX basic order, was arrived at through an intermediate stage of SvXV/vSXV where the main verb still has its traditional end-position; these patterns are thus a kind of compromise between two conflicting tendencies. In the present corpus, these developments were slower in dependent clauses. This agrees with Vennemann's hypothesis (1973) that dependent

clauses may retain XV patterns longer than main clauses, because the forces at work in them are less strong than in main clauses.

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- 1 I am grateful to Erik Andersson, Nils Erik Enkvist, Auli Hakulinen and Fred Karlsson for valuable comments on earlier versions of this paper and on the coding plan developed for data processing. I am also indebted to Hannu Koivula and Jussi Salmela, mathematicians of the Faculty of Humanities, University of Turku, for operational help with the computer runs.
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PRESUPPOSITION, ASSERTION, AND DISCOURSE STRUCTURE

1.0. Abstract. It is a matter of common knowledge that discourse units are wired together in a specific way to form run-on texts. 'A sentence might be compared,' as Enkvist (1975b) says, 'to a piece of flex with plugs at either end, and these plugs have to connect with corresponding plugs at the end of neighbouring sentences.' The task of the present paper is to point out that in addition to "wired" linkage between hypermorphemes, there is also "wireless" communication, obtained via discourse presuppositions -- so far not investigated at all in spite of the plethora of work on the sentential variety. Both the discourse assertions and the discourse presuppositions are here interpreted as hypermorphemes, and represent overt and covert contributions respectively to discourse structure. It is suggested that covert structuring of discourse is at least as important as its corresponding overt counterpart precisely as a result of its far-reaching consequences on the actual linearization.

1.1. Linguistic units and structural span. The most outstanding question in any discussion of word order is that of the theoretical frame of reference: word order -- within what frame? The answer is provided by the complex binary opposition between the micro- and macro- levels as outlined in (1):

Invited to comment on the present paper were S.Eliasson (Uppsala), N.-E. Enkvist (Abo), R.Jakobson (Harvard), F.Kiefer (Budapest), L.Levitchi (Bucharest), R.Mackay (Mexico), B.Sigurd (Stockholm), J.Spencer (Leeds); thanks are hereby expressed for all the written comments received. But the author must assume full responsibility not only for the possible inadequacies in the paper, but also for its sometimes heavy sentences. The full 31-page text of the provisional version was released in the No. 6 (November 1975) issue of the Stockholm Working Papers in Discourse Analysis.

(1)	MICRO-LEVEL	Below the Sentence
	1.1 Micro-Level	Morpheme / Word
	1.2 Mini-Level	Phrase (Group)
	1.3 Macro-Level	Clause / Sentence
	MINI-LEVEL	Sentence
	2.1 Micro-Level	Simplex Sentence
	2.2 Mini-Level	Complex Sentence
	2.3 Macro-Level	Compound Sentence
	MACRO-LEVEL	Above the Sentence
	3.1 Micro-Level	Hypermorpheme (as Minimal Unit of Discourse)
	3.2 Mini-Level	Partial Sequence
	3.3 Macro-Level	Total Sequence

The issue of word order has bearing upon the upper ranges of this hierarchy and is the outcome of presentative movement transformations, as described by Hetzron (1975), and triggered by constraints characterising overall discourse structure. As pointed out by Kiefer (1971), early transformational work was 'inclined to relegate the problem of word order in toto to performance'. It is within such an approach that constituent ordering was placed within a clear sentence perspective (cf Daneš ed 1974). Thus, Functional Sentence Perspective takes the SENTENCE as its fundamental structural span, and deals essentially with units placed immediately under it in the hierarchy. FSP has in consequence at least one point in common with early transformational approaches, and tends to concentrate excessively on phenomena of the type --

- (2) Deutsch spricht man in Österreich.
 //ASSETS ?// German is spoken in Austria; (alternatively)
 The language spoken in Austria is German.
 // PRESUPPOSES ?// Really good German is only spoken in
 Austria.

We here consider that Topic, Comment, and even Focus are manifestations of the presentative function in the syntactic linearization. The Focus/Presupposition binary opposition of a sentence model is replaced by the Assertion/Presupposition dichotomy within a discourse model, the linearizing operations being taken care of by the Presentative Movement.

1.2 Cue overlap. It has been already pointed out that 'cues from levels other than phonotactics or lexis may play a crucial role' in investigating word order. Furthermore, the author goes on to state --

(ENKVIST 1975a) Many of the forces affecting the word order of a clause or sentence do not reside within that clause or sentence. ...Some of the parameters affecting word order must be sought outside the affected clause or sentence, in the textual or situational context, in the universe of discourse, in the culture and knowledge shared by the communicants, in the strategies by a speaker or writer, and in other domains outside the sentence itself.

The Assertion/Presupposition interplay at discourse level is one such domain. A discussion of morpheme sequentialization within a consistent discourse perspective would bring in useful cues for sentential description from the area of the hypermorpheme; such cues are not provided by information coming from the language units below sentence level. An investigation of constituent ordering (morpheme vs hypermorpheme) within the structural span of discourse poses quite different theoretical problems. As has already been pointed out by Ruth Kempson (1975: 123), 'the structure of discourse is not predictable in the way the structure of a sentence is'. One argument in support of positing discourse as a separate level of linguistic investigation is that central categories of conventional linguistics -- e.g. Competence/Performance -- no longer seem to hold at the level of discourse, where ordinary theoretical constructs, such as style and context, are modified beyond recognition as a result of pressure coming from the area of pragmatics. After identifying pragmatics with performance, Deirdre Wilson goes on to exclude context altogether from the range of preoccupations of a competence model:

(WILSON 1975: 60) ... wherever context plays a part in the interpretation of a sentence it is the job of a pragmatic, rather than a semantic theory to determine the part it plays.

1.3 The semantics of discourse. Mainstream linguistics is definitely against incorporating parameters coming from supra-sentential levels into the standard theory: inter-sentence relations are often dogmatically excluded from a theory of semantics of the standard type:

(KEMPSON 1975: 123) ...inter-sentence relations are excluded by fiat since they constitute part of a theory of discourse, not a theory of semantics. /.../The syntax of a simple sentence cannot be allowed to have a conjoint sentence as part of its underlying structure for two reasons: (i) there is no

syntactic evidence to justify such an underlying structure...
 (ii) general conditions on recoverability prohibit such an analysis. /.../

Similar reasons militate against a semantic rule stating as part of the interpretation of a simple sentence that the preceding sentence has contained in it an indefinite noun phrase. To incorporate either type of rule into the grammar would be to transform the grammar predicting the sentences of some language into a grammar predicting the discourse of some language. /.../ Thus any attempt to incorporate such a prediction into the grammar is in principle doomed to failure.

Restricting grammar to sentential description is indeed a sensible suggestion, all the more so as discourse does indeed evince its own specific patterning. One thing is certain: it might perhaps be wise to reconsider the significance of cues coming from areas of investigation situated above the sentence, for 'inter-sentence relations' cannot be 'excluded by fiat from a theory of semantics'. They are already part and parcel of a semantic component of a theory of discourse. And to be sure, a theory of semantics can never be pitched against an overall theory of discourse.

2.0 SENTENTIAL PRESUPPOSITIONS VS DISCOURSE PRESUPPOSITIONS.

2.1 Sentential presuppositions. All discussions of presupposition in both philosophy and linguistics have deliberately been conducted on decontextualized -- but easily contextualizable -- language data. By way of illustration, the reader is referred to the set of Russellian "King of France" arguments which were invariably put forth at a time when the "present King of Spain" had not yet been reinstated. The whole discussion originated just before the turn of the century in philosophy and only reached mainstream linguistics after 1968. The issue has now reached a stage of acute crisis, as is excellently pointed out in Wilson (1975) and Kempson (1975). The deadlock seems to be so complete that a drastic suggestion is made -- the total eradication of the theoretical construct in question from all semantic theory. This is done with an arsenal of arguments mainly coming from the field of discourse.

2.2 Discourse presuppositions. Presupposition in philosophy goes at least as far back as Heidegger, who, according to Richard Palmer (1969: 135) pointed to the 'impossibility of presuppositionless understanding'; in fact, Heidegger's 'interpretation is never a presuppositionless grasping of something given in advance' for the simple reason that 'the most presuppositionless interpreter of a text has preliminary assumptions'. I am therefore inclined to derive

two distinct presuppositional traditions in philosophy: (a) one centred around Russell and Frege, which formed the essence of practically all theoretical discussion in the 20th Century, focused on Sentence/Proposition/Statement, and developing very close ties with both formal logic and truth-conditional semantics; (b) the tradition of discourse presuppositions, derived directly from Heidegger, and reaching linguistics as a result of the systematic investigation of language units larger than the sentence via text linguistics and hermeneutics. It is in fact Heidegger's 'textual presuppositions', reinterpreted in a sociological frame of reference by Rommetveit (1974) that form the basis of the discourse presuppositions, first discussed by Muraki (1972). We thus add to the already exceedingly long list of presupposition typology (cf Allwood 1975, for conventional, non-conventional, and other presuppositions) by suggesting the dichotomy sentential vs discourse presuppositions. Allwood distinguishes between (a) lexical presuppositions (i.e. connected with lexical items), and (b) thematic presuppositions (i.e. connected with the information structure of the sentence). As part of a similar taxonomic-typologic approach to the same linguistic phenomenon a case is made in support of discourse presuppositions as inter-sentential semantic phenomena sustained through the discourse across sentential and participant boundaries as well as intra-textual boundaries of any other type. Allwood's 'presuppositional irony' is after all best manifested at discourse level and is ultimately a feature of discourse structure and constituent ordering (See Section 3.4 of this paper).

2.3 Towards a formula for discourse presuppositions. Starting from discourse defined as 'a non-conjoined chain of sentences', we tentatively define discourse presuppositions as 'whatever has to be assumed across conventional sentence boundaries -- possibly subsequent to conjoiner deletion processes -- in order for a discourse to be completely meaningful'. The only researchers so far to deal with discourse presuppositions have been Muraki (1972) and Landesman (1972). There are two fundamental definitional strategies that one could indeed adopt in defining the phenomenon: either (a) select the widest possible and most comprehensive definition, or (b) resort to the narrowest and most restricted possible one. We are going to adopt the former strategy and bracket a substantial amount of implicit meaning under the same heading. As all presuppositions are treated as entailments by Wilson (1975), and at least part of them as implicatures (cf Gazdar 1975), the premises exist for a provisional methodological decision to bracket several logical constructs under

the same blanket term. The definitional test of discourse presuppositions is not operated in terms of negation (e.g. 'statement which is kept stable under negation'), but rather in terms of discourse heads (cf Sandulescu 1975) and their possible interrelationships.

In contradistinction to a sentence, a discourse contains (a) assertions, and (b) presuppositions; whereas most of the assertions can be adequately handled at sentential level, most of the presuppositions require a frame of reference wider than the sentence. One main reason is that they form an undercurrent which is never quite capturable at the level of the linear manifestation of the discourse. One common way of defining presuppositions is via a two-term relationship, according to the 'X PRESUPPOSES Y' formula (cf Leech 1974: 291). The 'X PRESUPPOSES Y' way of defining them in its turn presupposes that both X and Y are sentences or phrases (cf Ducrot 1971: 191-221). Secondly, there is the assumption that both X and Y are in a paradigmatic, rather than syntagmatic, relationship. But what happens in discourse? A discourse approach to presuppositions foregrounds the syntagmatic axis in the first place, and the issue of co-occurrence becomes more important than any other relationship. It must therefore be emphasized that the X/Y interrelationship may be either (a) paradigmatic, or (b) syntagmatic, or even (c) a complex conflation of both.

3.0 INTER-SENTENTIAL LINKAGE.

3.1 Overt inter-sentential linkage. It is a matter of common knowledge that discourse units are wired together in a specific way to form run-on text. 'A sentence might be compared,' as Enkvist (1975b) says, 'to a piece of flex with plugs at either end, and these plugs have to connect with corresponding plugs at the end of neighbouring sentences.' But this is merely one aspect of the problem: the overt aspect. Such overt connectedness may be achieved, as is known, by the following means: (a) definite noun phrases with the definiteness feature derived from the fact that there was prior mention of that particular noun phrase in the discourse; (b) similarly, extensively recurrent pronouns; (c) sustained use of tense throughout the discourse with one occurrence in close correlation to the other, particularly the issue of tense sequentiality and the degree of indirection of the discourse; (d) the expression in various ways of the three types of deixis -- Time, Place, and Person -- in the linear manifestation; (e) conjoinability via conventional conjunctions.

The theoretical model we propose thus assumes the existence of an abstract connector K between sentences. The internal structure of this abstract unit maps

out all features related to discourse connectedness. A systematic investigation of K structuring is of vital importance to the formulation of an explicit theory of discourse. The abstract connector evinces an overt structure covering all connectedness markers emerging in the linear manifestation of the discourse: semantic significance of NP recurrence, sustained tense and time deixis, sustained place deixis, explicit conjoining via (a)conventional, and (b) unconventional conjoiners. All this builds the overt matrix K_o of the abstract connector K, which has both psychological and communicative reality in the complex process of discourse mapping (easily triggering rephrase phenomena in spoken discourse). Given its reality in the communication act, K should in no way be viewed as a mere inventory of random characteristics at meta-level, very much like the chaotic jumble of plugs on the floor of a good recording studio of any modern radio station. (The structure and function of the abstract connector K will be discussed in far greater detail in a forthcoming paper, and its communicative significance will be then placed in the right perspective; cf Sandulescu 1976)

In addition to "wired" linkage (i.e. of the overt kind) between hypermorphemes, there is also "wireless" communication. By the side of the overt connectedness markers discussed above, there is a complex set of covert connectedness markers, which in their turn build a matrix, quite symmetrical in shape, but not at all similar in content, to the overt matrix K_o . These covert discourse-continuity markers form a separate matrix: the covert matrix K_c of the abstract connector K.

Such abstract matrices of both types necessarily exist in both discourse participants -- the sender and the receiver -- at inter-sentential boundaries: an adequate description of their structure is an essential part of a theory of discourse. The present discussion does not deal with the structure of the overt matrix K_o , as many of the overt characteristics have already been much discussed (cf Halliday & Hasan 1976). For purely methodological reasons the overt abstract connector K_o is kept as empty as possible of discourse connectedness, mainly at the level of the linear manifestation of two-hypermorpheme discourse. This particular procedure has been resorted to in a deliberate attempt to delete "wired" linkage, and restrict intercommunication to the "radio'd" variety; in other words, attention is focused on the covert matrix to the total exclusion of the overt one (as much as this is humanly feasible).

3.2 Covert inter-sentential linkage. In his discussion of sentence grammar dating back to 1957, N.Chomsky starts with one initial symbol -- that of S. In consequence, any conventional sentence-based linguistics takes as its starting point the same initial single symbol. A discourse model, however, even if it is of the simplest possible variety, must necessarily start from the following three initial symbols, evincing a close correlation between them:

$$(3) \quad Sx \quad Sy \quad Sz$$

These correlated initial symbols are hierarchically organized. The present discourse model does not begin with syntax, but foregrounds the semantic parameters from the start, assuming that though discourse evinces definite structuring, it does in no way evince syntactic parameters of the conventional kind, which are commonly handled by any generative-transformational grammar (for a similar view, cf Ruth Kempson 1975: 123). Not only do we approach the problem from the semantic angle of vision, rather than the purely formal and syntactic one, but we foreground the most recent and very controversial area of semantics, namely the theory of presuppositions. As was already mentioned, the current presupposition formula is -

$$(4) \quad X \text{ PRESUPPOSES } Y$$

where both X and Y are assimilated to hypermorphemes. As a result, we can rewrite the above formula as --

$$(5) \quad Sx \text{ PRESUPPOSES } Sy$$

where sentential hypermorpheme x presupposes sentential hypermorpheme y. In discourse, however, this formula is radically changed in that discourse presuppositions operate on the following far more complicated pattern:

- (6) The interrelationship of syntagmatically co-occurring Sx and Sy can only be established on the basis of an underlying Sz, where all symbols -- Sx, Sy, and Sz -- are to be interpreted as sets.

Thus a two-hypermorpheme discourse pQ of the type --

$$(7) \quad pQ \quad ===) \quad Sx \quad + \quad Sy$$

would presuppose the existence of at least one background sentential assumption or underlying statement belonging to the set Sz; in extreme cases, the set Sz may be open-ended as regards the possible number of underlying statements. In

this way, discourse presuppositions carry with them three-term relationships which generally replace or supplement the more primitive and more conventional 'Sx PRESUPPOSES Sy'. Here is an example in point:

(8) "Where is the bicycle ? I want to shave this morning !"

This triangular hypermorphic interaction implies that the first two of the three elements involved are linearized, they are, in other words, part and parcel of the linear manifestation of the discourse, whereas the third element, operating as a semantic link between the two, is never part of the same linearization. In terms of more traditional linguistics, if we assume that in syntactics we are always faced with the two axes -- one syntagmatic and the other paradigmatic -- it is Sx and Sy that are always in a relation of overt co-occurrence, with Sx in initial position (functioning as the Precedent), and Sy in final position (functioning as the Subsequent). Sz is in a paradigmatic relation to both Sx and Sy. Such a relation is always diagrammatically triangular:



In a syntagmatic relationship, the dotted arrow indicates the linear direction of discourse, whereas the continuous-line arrows are here used to indicate a paradigmatic relation between the surface manifestation and the depth interpretation. For reasons of concision and simplicity, we disregard the assertion aspects of the discourse and concentrate on its presuppositional aspects; we also disregard the possible relations between different Sz's as they clearly emerge in multi-hypermorphic discourse, and concentrate exclusively on two-hypermorphic discourse, where there is only one single set of Sz apparent. A correct interpretation of the triangle relation given in (9) emphasises the passage from a sentence model of description to a discourse model. Other interesting examples illustrating the triangle relation are the following:

- (10 a) "Where is the soap ? I'm hungry !"
- b) The writer told the story of his future novel to his audience. She immediately wrote a letter to her brother John.
- c) They were asked to work more quickly in order to finish very early. He fell ill all of a sudden and went to bed.

- d) It is clear that he made a mistake. The city is far bigger than I thought.
- e) They are learning English. He has been playing football.

To summarize: S_x and S_y linearly co-occur; they both presuppose an underlying assumption. This three-term relation can be rephrased as follows:

- (11 a) S_x PRESUPPOSES (part of) S_z
- b) S_y PRESUPPOSES (part of) S_z

where all three symbols are assigned fixed positions in the hierarchy. There is furthermore a relation of identity between the two S_z 's, and an obvious relation of diversity between S_x and S_y . We repeat that each of the three symbols stands for sets of one or more than one items. This set prerequisite is included into the model in order to permit an easy switch from the investigation of two-hypermorpheme discourse to that of multi-hypermorpheme discourse. The set provision also facilitates reference to the notions of research focus in relation to structural span. For this very reason, in addition to subscripts of the first degree -- O_x , O_y , O_z (Precedent, Subsequent, and Non-Emergent) -- we propose the use of subscripts of the second degree for descriptive purposes, thus --

- (12) O_{x_1} O_{x_2} O_{x_3} $O_{x_4} \dots O_{y_5}$ O_{y_6} ...

A two-hypermorpheme discourse can in this way be turned into a multi-hypermorpheme discourse by a corresponding expansion of the structural span. The focus is kept fixed on the S_x/S_y interrelationship, which need not be symmetrical. It must be emphatically pointed out that the above-outlined notation system describes an exceedingly complex communicative reality. The question of underlying statements in multi-hypermorpheme discourse is of fundamental significance: there is open-endedness in two directions -- overt vs covert -- one of which is non-emergent in the linearization.

3.3 The ultimate nature of the S_z . There are two fundamental kinds of S_z : (a) one that is kept constant throughout the whole discourse, and summarizes the global constraints on discourse, which in their turn are of three fundamental types -- syntactic, semantic, and pragmatic; (b) the shifting part of the S_z (in contradistinction to (a), which is the constant part of it), containing

discourse features and constraint specifications which change with the passage from one abstract connector to the other. This dichotomy is ultimately a continuum, on which a further intermediate stage (c) of zonal constraints establishes a bridge between the clearly permanent features of the discourse, subsumed under (a) above, and those subsumed under (b), which are strictly local constraints. GLOBAL, ZONAL, and strictly LOCAL are essentially methodological cuts on a continuum. This is in agreement with the following :

- (13) All global features and constraints remain constant throughout the total sequence tQ.
- (14) All zonal features and constraints remain constant throughout the partial sequence pQ.
- (15) All local features and constraints characterize solely the structure of one single matrix of the abstract connector K; they are not recurrent in any of the senses in which both global and zonal features are, for the simple reason that as soon as they characterize two abstract connectors instead of one, they become zonal, rather than strictly local, features.

Working towards a discourse model the fundamental task of which is to make connectedness explicit has its advantages: it provides among others, via the overt and covert connectors, a homogeneous treatment of heterogeneous features (cf Pike 1967: passim; cf Weinreich, Labov, & Herzog 1968: 3.21). This means placing the syntactic on a par with the pragmatic; the semantic features are so overwhelmingly important that they are superordinated to the other two components. Devised expressly with a view to incorporating the various features of the communication act, the model can easily cope with the notion of Participant Boundary (cf Sandulescu 1975). Finally, the treatment of absolutely all discourse features is a synthesis at another linguistic level -- that of discourse -- of two or several tree-diagrams of the kind we got so accustomed to in the forest of generative approaches: it is an attempt to co-ordinate the structural information carried by the tree-diagram.

3.4 Prolegomena to semantic distance. Actual Sz structuring is determined among others by the semantic distance existing between co-occurring Sx and Sy:

- (16) If the semantic distance between S_x and S_y is exceedingly great, then the set S_z is substantially overloaded.
- (17) It is excessive overloading of the covert matrix of the abstract connector K that actually leads to the rejection of co-occurrence potentialities between S_x and S_y .

There are basically two kinds of illustration material of this phenomenon in two-hypermorpheme discourse: (a) there is one kind of language data involving connectedness across participant boundaries; (b) there is another kind of material -- the so-called run-on text, to resort to a looser terminology. The abstract connector is structured differently in the two cases in that it is "world-homogeneous" in one case, and "world-heterogeneous" in the other (world is here used in the Hintikka 1969 sense of "possible worlds"). The present approach to discourse connectedness thus attempts to avoid the uneasy relation so far existing between the semantic, pragmatic, and syntactic components of the model. There are two fundamental problems related to semantic distance between hypermorphemes; these problems are somewhat similar to the issue of semantic distance between morphemes: (a) one is the adequate theoretical explanation of the phenomenon, which, via discourse-head interrelationship, also covers the whole theory of figures in poetics, e.g.

- (18) She dropped a tear and her handkerchief.

(b) the other one is the actual measurement of such distance. Measurement operations are, however, too heavily dependent for the time being on (i) pragmatic factors, (ii) overall discourse structure, and (iii) discourse typology. This particular point can easily be illustrated with data related to morpheme sequentialization:

- (19) //DISCOURSE// (She dropped a tear.)(She dropped her handkerchief.)
- (20) //SENTENCE// (She dropped a tear and her handkerchief.)

It is interesting to note that the operation of presentative movement transformations on such sentences directly affects the issue of semantic distance, as a matter of course considerably increasing it:

- (21) It is a tear that she dropped, and her handkerchief.
- (22) A tear she dropped, and her handkerchief.
- (23) Her handkerchief she dropped, and a tear.
- (24) Her handkerchief and a tear she dropped.

Measuring semantic distance means in other words measuring such distance between discourse heads at sentence level, and then analysing in a preliminary stage the effects produced by the presentative sequentialization of morphemes; in a subsequent stage, the procedure is analogical, but qualitatively different, at discourse level, where the question is the degree of match and mismatch between hypermorphemes similarly linearized. It is only on the basis of the premises provided by semantic distance in discourse structure that we can begin to discuss the implications for the overall patterning of text derived from surface object, often called comment, and surface subject, as often called topic.

4.0 ULTIMATE NATURE OF WILSON'S AND KEMPSON'S DEMONSTRATION DATA.

4.1 Discourse in disguise. Most of Wilson's examples can be turned into discourse on the basis of a few very simple processual rules of disjoining. As soon as the sentential demonstration data is turned into discourse, strong evidence is obtained in support of discourse presuppositions. It is worth remembering that discourse can and does indeed accomodate contradictory presuppositions in its structure, whereas the sentence does not. A case in support of discourse presuppositions concurrently maintains the validity of both argument and demonstration data against sentential presuppositions. Wilson's discussion of contradictory presuppositions at sentence level indicates how necessary it is to pay due attention to the Conjoiner Deletability Principle (cf Sandulescu 1975).

- (25) (Wilson 1975: 51) //SENTENCE// No-one has ever claimed that Hiawatha was a communist: the claim that Hiawatha was a communist, then, has not destroyed Bill's faith in Longfellow.
- (26) //DISCOURSE// No-one has ever claimed that Hiawatha was a communist. The claim, then, has not destroyed Bill's faith in Longfellow.

- (27) (Wilson 1975: 49) //SENTENCE// Bill Bloggs might be here
-- I don't know whether such a person exists.
- (28) //DISCOURSE// Bill Bloggs might be here. I don't know
whether such a person exists.
- (29) (Wilson 1975: 73) //SENTENCE// If your teacher was a
bachelor you were lucky, but if your teacher was a
spinster you were unlucky.
- (30) //DISCOURSE// If your teacher was a bachelor you were
lucky. If your teacher was a spinster you were unlucky.

In (30) for instance, discourse formation involves the following distinct operations, provisionally called "processual rules of disjoining": (a) but deletion; (b) period insertion; (c) initial capitalization. The processual rules turning compound and even complex sentences into discourse are either paraphrase rules, or graphematic rules. Very simple paraphrase rules are provided through the operation of the Conjoiner Deletability Principle, leading to the deletion of most co-ordinating conjunctions, and some of the subordinating ones. Subordinate-conjunction deletion must be accompanied by corresponding paraphrase in order to maintain intact the overall semantic interpretation of the discourse. Thus in a sentence like --

- (31) (Wilson 1975: 77) //SENTENCE// Either Joanie accused
her husband of reading her letters or she accused him
of not reading them

the discontinuous conjoiner either ... or ... is rewritten as an adverbial conjoiner, such as alternatively. In fact, sentence (31) passes through the following stages:

- (32) Either X accused Y of doing Z, or X accused Y of not
doing Z.

This, in turn, can be rewritten as --

- (33) Either (Sx) or (Sy), where --
(Sx(X accused Y of doing Z))
(Sy(X accused Y of not doing Z))

Then, (33) can be rewritten as discourse through the operation of a paraphrase rule of reinsertion of the non-conventional conjoiner into the linear manifestation of the discourse in order to preserve the initial semantic interpretation intact:

- (34) (D(Sx(X accused Y of doing Z))(K(alternatively))
(Sy(X accused Y of not doing Z)))

where alternatively is an adverbial replacement for the initial discontinuous conjunction. Both assertive and presuppositional structuring stay unchanged in the sentence-to-discourse transition. Thus, according to Wilson (1975:77), sentence (31) --

- (35) //ASSERTS// Either Joanie indicated that her husband read her letters or she indicated that he did not read them.
(36) //PRESUPPOSES// (a) Joanie judged that reading her letters was bad.
(b) Joanie judged that reading her letters was not bad.

All this makes us reshuffle (31) in the shape of the following two-hypermorpheme discourse:

- (37) //DISCOURSE// Joanie accused her husband of reading her letters. Alternatively, she accused him of not reading them.

Such two-hypermorpheme discourse, in addition to preserving semantic appropriateness in point of conjoining, keeps unchanged the corresponding set of contradictory presuppositions. Besides disjoining, the only change that we suggest here is that the sentential presuppositions are to be interpreted as discourse presuppositions, primarily by virtue of the fact that the language segment under research focus has undergone discourse formation. There are other, more complex, instances of potential discourse formation among the wealth of examples put forth by Wilson in her attempt to delete Presupposition from a semantic theory of sentence linguistics:

- (38) (Wilson 1975: 75) //SENTENCE// If Sartre knows that Chomsky is alive, I'll be surprised, but if he knows that Chomsky is dead I'll be amazed.
//PRESUPPOSES// (a) Chomsky is alive
(b) Chomsky is dead.
(39) (Wilson 1975: 134) //SENTENCE// If John had left I would have seen him go; but I did see him go, so he did leave.
(40) (Wilson 1975: 134) //SENTENCE// IBM has admitted that their computers often turn into frogs, so their computer obviously turn into frogs.

4.2 Defining discourse presuppositions in relation to testability conditions. The present, very brief discussion has selected the problem of presupposition and has related it to sentence structure and to corresponding discourse in order to bring out in bold relief the flimsy nature of the boundary. In consequence, basing very strictly a discussion of word order on such a boundary may have its dangers.

In order to emphasize the overwhelming significance of the underlying stream of implicit meaning in any discussion of linearization aspects as well as constituent ordering, we propose to define discourse presuppositions in the following way:

- (41) A discourse presupposition is any background assumption which enters into the structure of the abstract connector K -- necessarily underlying discourse connectedness -- and thereby establishing semantic links between hypermorphemes within the discourse. Testability in discourse lies in the mismatch between emergent and non-emergent hypermorphemes, measured in terms of semantic distance. Some such presuppositions are discourse-internal, others (e.g. the existentials) are most often discourse-external.

5.0 CONCLUSIONS.

5.1 Discourse semantics cannot do without presuppositions, though it may be conceivable that sentence semantics could do without them, as is suggested by Wilson (1975) and Kempson (1975). Presupposition becomes one of the fundamental theoretical constructs of a theory of discourse.

5.2 Discourse normally accommodates contradictory presuppositions between linearized hypermorphemes.

5.3 If sentential boundaries are relative, and so heavily dependent on alternative paraphrase, the actual frame of reference in which we speak of constituent ordering must still be an open theoretical question. Parameters vary extensively if we switch from grammatical structure to discourse structure.

5.4 Postulating the existence of an abstract connector K is the only way of providing an explicit description of connectedness in discourse.

5.5 The abstract connector K evinces an overt matrix K_o , structuring emergent information across sentential boundaries.

5.6 The abstract connector K evinces a covert matrix K_c , structuring non-emergent information across sentential boundaries.

5.7 The abstract connector K and the linearized hypermorphemes Sx and Sy are likely to be the fundamental units of discourse.

5.8 Discourse mapping, as a complex process endowed with both psychological and communicative reality, deals both with what is emergent -- e.g. linearized constituent ordering -- and with what is non-emergent -- the discourse presuppositions -- as well as with the complex interplay between the two.

5.9 The issue of semantic distance between both discourse heads (as constituent morphemes) and hypermorphemes, and the investigation of the empirical possibilities of measuring it form the most likely area of fruitful research for the future.

5.10 The presentative function, as discussed by Hetzron (1975), places the whole issue of constituent ordering in a new light. The balance between assertion and presupposition and the presentative movement ultimately determine the linearized structure of discourse and represent the real triggers of constituent ordering.

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ADVERBIAL POSITIONS IN FRENCH, CONTRASTED WITH THOSE IN SWEDISH:

STRESS, FOCUS AND SUBJECTIVITY¹

1.0. Some contrasts. French adverb positions show some specific characteristics that differ from those in some other languages, e.g. Swedish. The following are the most important contrasting features:

1.1. a. Swedish sentence adverbs have a more restricted distribution in the sentence than French ones, which can occur in most places except directly after the verb.

b. French verb-modifying adverbs can occur in all positions dominated by VP:

Le chat a + mangé + la souris + . (gloutonnement)
 Elle avait + décoré + la pièce + . (joliment)

This is different from Swedish, where they occur only after Aux and after NP object:

Katten hade + ätit - strömmingen + (glupskt)
 (the cat had eaten the herring (greedily)

or only after NP object:

Hon hade - dekorerat - rummet + (vackert)
 (she had decorated the room (beautifully)

c. French degree adverbs normally stand before the past participle:

Elle avait tellement bavardé à cette fête.
 Son comportement m'a énormement étonné.²

1 I am very grateful to Svenska Institutet, who, by paying my travel expenses, made it possible for me to participate in this symposium.

2 The semantically strongest element is underlined.

In Swedish, the corresponding adverbs are impossible in that position, and have to stand after the NP object:

- ^x Hon hade förfärligt pratat på den där festen.
(she had terribly talked at that party)
Hon hade pratat förfärligt på den där festen.
- [?] Hans uppträdande hade enormt förvånat mig.
(his behaviour had enormously astonished me)

d. Swedish verb-modifying adverbs can occur in initial position in main clauses, as a result of a topicalization transformation:

- Sluddrigt pratar han. (indistinctly he speaks)
Oartigt uppför han sig. (impolitely he behaves)
Dödligt hade snuten sårat demonstranten.
(mortally had the cop wounded the demonstrator)

This is impossible in French:

- x Indistinctement il parle.
- x Impoliment il s'est comporté.
- x Mortellement le flic avait blessé le manifestant.

Some French manner adverbs can occur initially, but only with a different status, shown for instance by their not being under negation:

- Gentiment, elle ne lui parlait pas.
(it was friendly of her not to speak to him)

whereas in Swedish, the initial adverb is here under negation:

- Vänligt talade hon inte till honom.
(it was not in a friendly manner that she spoke to him)

1.2. The fact that VP-adverbs cannot occur initially is part of a general difference between Swedish and French: Swedish (like German) can move any VP element, except Aux, to initial position, without any change in meaning. This is impossible in French:

- Homom gillar jag. ^xLui j'aime.
(him I like) Le
Snäll är hon ^xGentille elle est.
(nice is shè) ^xGentille est-elle.
Arbetar gör han ofta. ^xTravaille(r) { il fait } souvent.
(work does he often), fait-il

That degree adverbs stand to the left of the verb (point c) could be

related to another difference between French and Swedish, namely that French can have adjectives before or after the noun.

The relation adverb-verb seems to be parallel to the one between adjective-noun:

- Degree: Elle a légèrement bougé la tête.
Elle frisait un léger mouvement de la tête.
- Quality: Elle a dansé légèrement.
Elle dansait avec des mouvements légers.

The restricted occurrence of sentence adverbs in Swedish seems to be related to the restrictions on the order of other elements: the subject-verb inversion and the verb-second restriction (this rule could perhaps be formulated as one transformation that moves the verb to second place in main clauses, thereby accounting also for the different adverb positions in main and subordinate clauses).

2.0. "Important things last". In order to analyze the free occurrence of VP adverbs in French (point b), one must start from a general rule for - or rather a tendency in - French word order, which could be stated informally as follows

Rule 1: In every constituent, in French, the rightmost position is occupied by the element that bears the newest and/or most specifying information.

This is a rather trivial observation, incorporating principles such as "fat things last", "elements with a high degree of communicative dynamism to the right", "theme to the left - rheme to the right", etc. But it is interesting to see how systematically it works in French, by contrast with more left-modifying languages like German or, to some extent, Swedish.

This tendency is well known among traditional French linguists, and is carefully studied for instance in Strohmeier (1910) (in spite of its age, a highly interesting work on theme/rheme problems). It is probably related to the fixed end stress in French (the stress falls on the last syllable of a word or word group).

What I here call "new and/or specifying meaning" (related to concepts such as *rheme*, *comment*, or logical predicate) will become clearer in the light of the examples and definitions given below.

2.1. Grammatical morphemes. One realization of this rule is that grammatical morphemes practically always stand to the left of their head in French:

Noun:	le	} { garçon fils chat	The article and similar items stand to the left in French, whereas the definite article in Swedish is to the right of the noun.
article:	un		
	ce		
	mon		
	etc.		
	ce garçon-là		Specifying or contrasting elements, however, stand to the right.
	cette fille-ci		
	mon fils à moi		
plural:	[le fiʒ]	} {	Though the written language marks plural to the right, with an -s (<i>les garçons</i>), it is in spoken language marked only by the quality of the vowel of the article.
	[la fiʒ]		
	[le ɡarsõ]		
	[lə ɡarsõ]		
pronouns:	je le vois	} {	Personal pronoun is here "old fact" and does not give information. It must occur to the left of the verb.
	il me l'a donné		
Verb:			
tense:	a parlé	} {	has replaced: <i>parla</i> is tending to replace <i>parlera</i> and is tending to replace <i>parlerait</i> (the frequently used imperfect is a counterexample: <i>parlait</i>)
	va parler		
	allait parler		
person:	[ʒəparl]	} {	In spoken language, person endings are no longer heard (cf. Csécsy 1968). Instead, the personal pronouns <i>je</i> , <i>tu</i> , <i>il</i> , etc. can be considered as prefixes to the verb - they have a status quite different from nouns and other pronouns (cf. Kayne 1972). "Nous parlons" is frequently replaced by "on parle". (A counterexample is the productive plural marking to the right in some verbs: [ipõ - ipœv] il peut - ils peuvent [ifini - ifinis] il finit - ils finissent.)
	[typarl]		
	[iparl]		
	[õparl]		
	[vuparl]		
	[iparl]		

2.2. Sentence structure. Under the S node, all parts of VP must stand to the right, and cannot be moved to initial position by a transformation like the topicalization of Swedish (cf. above under 1.1.d and 1.2).

An element in initial position cannot be focus or rheme:

Énergiquement, Pierre a travaillé toute la journée.

cannot be the answer to

Comment Pierre a-t-il travaillé?

and it cannot be under negation (cf. above under 1.1.d).

Two special instances characteristic of a certain range of styles occur in questions and 'split sentences'. In spoken popular language, there is a tendency to have no inversion in questions:

Tu veux venir? instead of Veux-tu venir?

and furthermore - though less frequently - the question morpheme can occur to the right in the sentence (i.e. it is not fronted):

Tu vas où? T'as vu qui? etc.

And in spoken French (mostly of children) and in substandard language, there is a tendency to split up the sentence into smaller ones, each containing a lexical element to the right and empty morphemes to the left:

(Il) y a ton père qui arrive.	instead of	Ton père arrive.
Je vois mon frère, il est content.	instead of	Mon frère est content.
('vois' is a dummy verb)		

2.3. Modifications. Let us now widen our perspective and look more generally at lexical elements that modify a head. As in Swedish, PP's practically always stand to the right of their heads. Adjectives and adjectival adverbs, however, can stand before as well as after their head, which I mentioned as being specific for French. As Enkvist (1976) points out, they should then have a different thematic value - the rightmost one being comment or rheme. Theme is often defined as 'old fact' as opposed to rheme which is 'new fact', i.e. information not previously mentioned. However, differently from NP's and PP's, adjectives and adjectival adverbs

can seldom be 'old fact'. It is therefore important to try to define them in other terms when they occur as theme or rheme, and as left-modifiers or right-modifiers, respectively.

2.3.1. Adjectives and adverbs. The difference between preposed and postposed adjectives has been thoroughly examined by several grammarians. I cite some examples of such analyses:

Togeby says:

The main rule is that the postposed adjective is attached independently of the substantive. It is an analytical construction, with two elements, whereas the preposed adjective can be said to be fused with the substantive.... Preposed adjectives have a pronominal, numeral or elementary value, or indicate a quality inherent in the noun. (Togeby 1965: 118.)

This seems well compatible with the rule mentioned above (Rule 1), since the preposed adjective contains less specified information than the postposed one. Strohmeier's statement reads as follows:

Bestimmende Adjektiva stehen hinter, schmückende vor dem Substantiv... Das 'bestimmende' Adjektiv ist ein logisches Prädikat, und das Substantiv das logische Subjekt dazu, bei dem 'schmückenden' Adjektiv haben wir es dagegen mit einer Verschmelzung zweier nur grammatisch gesonderter Wörter zu einem einzigen Begriffe zu tun. ... Stellt das Adjektiv einen affektvollen Ausdruck dar, so steht es gleichfalls gern vor dem Substantiv. (Strohmeier 1910: 91, 93.)

Adverbs too have a similar relation to their verb. Manner adverbs are normally postposed, as in

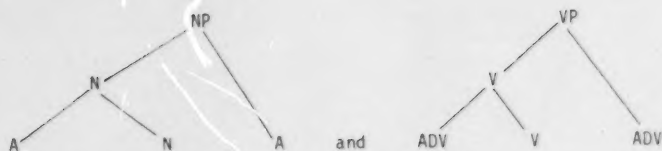
Il a travaillé énergiquement.

whereas degree adverbs are preposed:

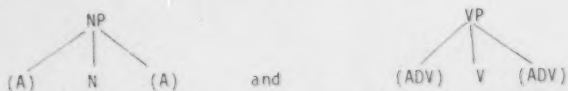
Elle a tellement bavardé.

Here also, the manner adverb is a predicate, independent of the verb, with full semantic content, whereas various degree adverbs only indicate higher or lower degrees of the quality indicated by the verb.

2.3.2. Analysis. One could account for this with a phrase structure like



But various tests with constituents (movements of A+N or ADV+V together, or of N+A and V+ADV) give contradictory results, and indicate rather that it is not possible to find a hierarchy of constituents, either for adjectives or for adverbs. I shall therefore propose instead that the phrase structure for both is



and that the differences should be accounted for in surface structure (or perhaps in shallow structure). These structures could also be related to the end accent and to the attribution of focus dependent on this accent.

3.0. Focus to the right. Focus can be defined as the highest predicate, and a predicate must be a semantically independent unit. This is, however, not the case for those adjectives or adverbs which stand before their heads. We shall see below in what further sense they fail to qualify as predicates.

Whether the present analysis is true or not (and more careful tests have to be done to find out the exact structure), one can observe the following tendencies in French (they should, however, be read as tentative rather than as clear-cut rules):

Rule 2: Elements to the right of their head are focus.

Rule 3: The main focus of the sentence is in the rightmost place under VP (and in the highest S if there is more than one).

Here focus is defined as an element which can be negated or questioned in isolation, or which provides the only new information in an answer. This is often also called *rheme* or *comment*. (cf. Sgall et al. 1973) e.g.:

a. Pierre n'a pas travaillé énergiquement.

Presupposed: Pierre a travaillé.

Focus: (il ne l'a pas fait) énergiquement.

b. Comment Pierre a-t-il travaillé? - Il a travaillé énergiquement.

Qu'est-ce qu'il a fait énergiquement? - Il a énergiquement travaillé.

The underlined elements are focus.

c. Pierre a-t-il travaillé énergiquement - ou paresseusement?

Pierre a travaillé is presupposed, and énergiquement is focus. This last test has to be distinguished from other cases of contrast, which may also concern non-focused elements: e.g.

Aujourd'hui, je vais bien, mais hier, j'avais une gueule de bois.

These adverbs, the so-called "setting" adverbs, are normally considered as thematic. And as mentioned above (2.3.), in French they can neither be the answer to a question nor be under negation, and therefore they cannot be focus.

3.1. Focus on adjectives. According to Rule 2, only adjectives standing after the noun, not those standing before the noun, can be focus. For instance:

Negation: a. Context: - "Un type s'est présenté aujourd'hui".

Ce n'était pas un homme jeune, il était déjà assez âgé.

*Ce n'était pas un homme jeune, c'était une dame

*Ce n'était pas un jeune homme, il était déjà âgé.

b. Context: - "Quelqu'un s'est présenté aujourd'hui".

Ce n'était pas un jeune homme, c'était une femme.

Question: Comment était le type qui s'est présenté?

?C'était un homme jeune, avec ...

?C'était un jeune homme, ... (this is strange, because "type" implies "homme", which is therefore old fact)

In Swedish, on the contrary, focus on preposed adjectives is perfectly normal, since the adjective can be accentuated or not:

Det var inte en liten flicka, utan en pojke.
(it was not a little girl but a boy)

Det var inte en liten flicka, utan hon var ganska stor.
(it was not a small girl but she was rather big)

Det var en förmodligen liten flicka, eftersom hon inte nådde upp ...¹
(it was a probably small girl because she didn't reach ...)

3.2. Focus on adverbs. Parallel phenomena seem to be characteristic of adverbs as well.

*Elle n'a pas vachement bavardé.

*Il n'est pas étonnamment serviable.

Elle n'a pas bavardé beaucoup.

Comment a-t-elle bavardé?

? Elle a vachement bavardé.

Elle a bavardé beaucoup.

?* Elle a drôlement bavardé. (degree)

Elle a bavardé drôlement. (manner)

*A-t-elle {vachement / drôlement} bavardé - ou seulement un peu?

A-t-elle bavardé beaucoup - ou seulement un peu?

*Elle a, probablement {vachement / drôlement}, bavardé.

Elle a bavardé, probablement beaucoup.

3.3. It will now be possible to propose an explanation for difference b. above, namely the transportability under VP for French adverbs. French cannot mark the focus element of a sentence through accent, whereas German, Swedish, English etc. do so. In French, focus can only be in the rightmost place of a constituent, where the stress falls. Other devices for focalization of different constituents must therefore be used, e.g. cleft:

C'est attentivement qu'il a lu le livre.

C'est le livre qu'il a lu attentivement.

C'est lire le livre qu'il a fait attentivement.

Focus can also be marked by changing the word order so that the focus element comes to stand at the rightmost place in the VP:

Comment a-t-il lu le livre? - Il a lu le livre attentivement.

Qu'a-t-il lu attentivement? - Il a attentivement lu le livre.

Qu'a-t-il fait attentivement avec le livre? - Le livre, il l'a attentivement lu.

Qu'a-t-il fait? - Il a lu attentivement un livre.

¹ The sentence is not very natural, but seems to me possible and grammatical.

Especially for sentences of questionable acceptability, these structures pose problems, and they are difficult to test. The tendency, however, seems clear enough.

3.4. This has certain consequences for the occurrence of certain verb-modifying adverbs. As mentioned above, degree adverbs, which are normally not focus, stand to the left of the verb. On the other hand, "valency" adverbs (cf. Enkvist 1976), i.e. adverbs that are necessary complements to a verb, normally stand to the right of the verb. This is a natural consequence of the rules cited above: the semantically incomplete verb (e.g. *se comporter*, *habiter*, etc.) does not bring in any new information, and should therefore stand to the left:

Elle a tellement bavardé.
Il s'est comporté impoliment.

The incomplete verb cannot serve alone as focus of the sentence. This accounts for the fact that, in French, a valency adverb cannot occur initially:

*Impoliment, il s'est comporté.
*Étroitement, ils habitaient.

This would, however, be possible in Swedish (cf. 1.1.d). In French, according to Rule 3, focus would have to be attributed to *comporté* and *habitaient*, which is quite as impossible as in the simple sentences

*Il s'est comporté.
*Ils habitaient.

The opposite focus attribution of degree adverbs and valency adverbs also accounts for their different behaviour in cleft. Valency adverbs can be clefted perfectly well:

C'est impoliment qu'il s'est comporté.
C'est étroitement qu'ils vivent.

whereas degree adverbs cannot be clefted:

*C'est tellement qu'elle a bavardé.
*C'est complètement qu'il a oublié son adresse.

Only elements that can be focus can occur in cleft position, which is, according to Rule 3, necessarily the main focus of the sentence.

This shows also that cleft is dependent on focus and not on constituent structure (assuming that my analysis of the above categories of adverbs as being under the same node is correct).

3.5. Attitudinal sentence adverbs (such as probably and fortunately) can never be focus. They can be defined as paraphrases of sentences like

That S is probable.
fortunate.
etc.

Whereas the adjective in this construction is the predicate (and focus) to the preceding sentence, the corresponding adverbs, on the other hand, are not predicates, and can never be negated, questioned, etc. They have to be defined pragmatically. Thus Probably, Peter has come. is a speech act of assumption and has no truth value (see Bartsch 1972: 50-60). The constructions occur in complementary distribution: adjective in predicate (= focus), adverb in non-predicative function. This is why attitudinal sentence adverbs cannot occur in cleft:

*C'est heureusement que Pierre est parti.
*C'est probablement que Paul est bête.

The constructions one would rather use are of the type

C'est heureux que Pierre soit parti.

The notion of focus also accounts for the relation between preposed adjectives and sentence adverbs. In an unpublished paper, J. Cl. Milner has proposed that adjectives like

une simple robe, l'actuel gouverneur

should be derived from sentence adverbs:

NP qui est simplement une robe.
NP Qui est actuellement gouverneur.

because of their structural and semantic similarities. In accordance with the tendency not to derive adverbs from adjectives or vice versa, but to relate them lexically, the relation could be stated instead in terms of "non-focus" or "non-predicate", common for sentence adverbs and preposed adjectives.

This could also be a reason why sentence adverbs do not occur in VP after the verb:

²*Pierre avait lu probablement le livre.

In that case they would stand in focus position, and would have to be interpreted as such. This, then, might be an alternative explanation to the "transportability convention" proposed by Keyser. Compare also other types of adverbs that can be analyzed as sentence adverbs, e.g. "point-of-view adverbs":

Officiellement, Pierre travaille à la poste. (du point de vue officiel)

These adverbs occur in the same positions as attitudinal sentence adverbs, and like these they can be dominated by negation:

(?) Officiellement, Pierre ne travaille pas à la poste.
 (?) Pierre ne travaille officiellement pas à la poste.

But these adverbs may also be focus:²

Il ne travaille pas officiellement à la poste (mais en noir).
 Y travaille-t-il officiellement? (ou en noir?)

That they are not two different adverbs can be seen by their incompatibility:

*Officiellement, il travaille officiellement à la poste.

unlike

Naturellement, elle parle très naturellement.

where we have naturellement first as a sentence adverb and then as a manner adverb.

4.0. Left-standing elements. I have tried to show that, in French, the rightmost position of any constituent must be occupied by an element that bears new and/or specifying information. This principle is valid not

1 Not accepted by all informants.

2 The same also applies to time and place adverbs: when initial, they express "setting" and thereby become thematic and non-focus, whereas after the verb they can be the focus of the sentence.

only for lexical items in opposition to grammatical ones, but also for elements which are under focus, in opposition to those that are not. Focus elements are predicates, which implies not only that they have a full semantic content, but also that they can be subjected to negation or question, and that they thus have a truth value.

Something should be said, however, about the non-focus lexical elements standing to the left of their head. If they are not predicates, what are they, and what qualities do they have?

4.1. We could start by recalling Strohmeier's observation that affective adjectives are normally preposed. Affective (subjective, emotive) elements have recently been analysed more closely by Milner in his very interesting thesis (1976). He describes the syntactic and semantic properties of certain types of items - degree and emotive items - which are necessary for distinguishing between exclamative and interrogative sentences. These sentences have the same structure and are complementary, depending on what type of item occurs in them:

Quel livre lisez-vous là?	Quel idiot!
Quels livres aimez-vous?	Quel beau livre X a écrit!
Combien de livres avez-vous lus?	Combien vous avez lus de livres!

According to Milner, the elements that play a role in the interpretation of the sentence as interrogative or exclamative are either "indicating high degree" or "emotive", like *idiot*. These types of items have certain qualities which distinguish them from others. They cannot be questioned:

*Cet homme est-il un salaud?	(Quel salaud!)
------------------------------	----------------

unlike:

*Cet homme est-il un professeur?	(?Quel professeur!)
*Préférez-vous des romans passionnants?	(Quel livre passionnant!)

but:

Préférez-vous des livres anglais?	(^x Quel livre anglais!)
*A-t-elle { vachement drôlement } parlé?	(Qu'elle a parlé!) (Elle a vachement parlé!)

but:

A-t-elle parlé drôlement?
 gentiment?

Nor can these items be negated; that is, their negations do not mean the opposite of the positive sentence. Thus Milner compares:

?Tu es un imbecile!
 ?Tu n'es pas un imbecile (which does not have the same performative value)

!Il fait diablement chaud!
 xIl ne fait pas diablement chaud.
 etc.

Milner also mentions the impossibility, in general, of their being focus in any sense. The semantic content of these items is rather unspecified, and must often be defined in terms of a speech act. Tu es un idiot! does not have a truth value; it does not mean 'You have the qualities x...y', like e.g. Tu es un professeur. but it is a speech act of insult.

As for degree adverbs, it is questionable whether they have the same performative status. But like the other emotive items, they normally have a clear subjective nuance. Both categories have a rather unspecified meaning. One can therefore, says Milner, easily substitute them for similar items without changing the sense:

Quel idiot!	Quelle merveille!
Quel salaud!	Quel delice!
Quelle crapule!	
!Il fait diablement chaud!	
!Il fait énormément chaud!	
!Il fait tellement chaud!	
!Il fait vachement chaud!	

The sentences in every group are practically synonymous. To account for their differences and similarities, Milner marks these items with the feature "non-classifying", whose presence or absence will then decide between the interrogative or the exclamative interpretation of the sentence.

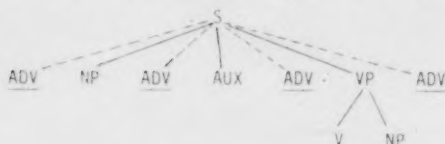
It seems from this that we have here the distinctive qualities we were looking for to characterize the left-standing lexical elements in French. Elements that are not focus thus have a tendency to be

- not predicative
- not classifying
- unprecise, simple, binary in their semantic content
- related to the speech act (pragmatically defined)
- subjective - emotive

Ducrot (1972: 18, 67, etc.) also shows this distinction between asserted, expressed information, e.g. Je souffre, Je suis triste, etc., which can be negated, questioned etc.; and "attested" or "played" information, which is pragmatic and emotive, as for instance (for the same 'meaning') Aie! or Helas!

The degree adverbs, which in my corpus always stood to the left of the head, were analysed by Milner as members of this class. As for the adjectives, it seems that the qualities mentioned by Milner for non-classifying items are exactly the same as those mentioned by the grammarians for distinguishing preposed adjectives from postposed ones. (This must, however, be empirically tested on a larger scale, which I have not been able to do yet.)

4.2. Let us now return to the attitudinal sentence adverbs. According to Jackendoff and others, they can occur in all positions under S:



As mentioned above, these adverbs cannot be focus, are not predicates, and can be considered as having a pragmatic use. There are, however, certain differences between their use in certain positions. Though they are in certain aspects different from VP adverbs, the rules for placement of sentence adverbs could in some sense be related to those for VP adverbs and adjectives.

I shall here discuss only the initial position and the position after Aux. The final position is very similar to the initial one, and the position after Aux is very rare.

a. In my corpus, certain adverbs always occurred initially, especially heureusement, malheureusement. Others only occurred after Aux: certainement, sûrement. The difference could be that heureusement is subjective (valid only for the speaker) and emotive (cf. Heureusement, il est là!), whereas certainement and sûrement are not, but are rather used if something is objectively and generally certain.

b. Another difference is the type of text where the adverbs occur. Thus in spoken language (children's spontaneous language, dialogues etc.) attitudinal sentence adverbs almost always occurred initially (or finally). On the contrary, in serious objective newspaper language (e.g. *Le Monde*), they normally occur after Aux. It is intuitively clear that spoken language is more subjective and emotive than written language. One can also refer to the distinction made by Benveniste (1966) between discours and histoire, discours being either spoken language or written personal language. The important point is that the sentences are in direct relation to the speech act and bear morphematic markers referring to it: I, you; here; now, tomorrow, yesterday; etc. Histoire on the contrary is objective, written language, abstracted from the time and place of the speech situation.

c. Some adverbs show certain differences in initial position or after Aux, e.g.:

Il est évidemment parti déjà.
Elle est naturellement assez paresseuse.

These sentences could be paraphrased by

Il est évident qu'il est parti déjà.
Il est naturel qu'elle soit assez paresseuse.

When the same adverbs occur initially, on the other hand, this paraphrase is not very natural, and their function is more like that of interjections, reinforcing what is said:

Evidemment, il est parti déjà!
Naturellement, elle est assez paresseuse!

In this position, they could, like adverbs such as salaud, easily be substituted for one another as well as for more interjection-like items like Bien sûr.

This also shows the more subjective and speech-act-bound character of the initially-placed adverb. A similar fact can be observed in sentences like

Probablement, Pierre a raté son examen - parce qu'il a l'air si
triste.
Pierre a probablement raté son examen - parce qu'il a répondu à
peu de questions.

If the adverb is placed initially, it is only for the speaker that that which happened is probable, from the impression he has of Pierre. Pierre and his professors, however, know the truth. In the second sentence, where the adverb is placed after Aux, the interpretation is rather that no one knows the truth, and probablement is valid generally, not only for the speaker.

One could thus observe that the attitudinal sentence adverbs of French have a tendency to be

- in the position after Aux when
 - objective
 - valid generally
 - specific in their meaning
- in initial position when
 - subjective-emotive
 - related to the speaker's opinion
 - unspecified in their meaning
 - more pragmatic in use

4.3. With the exception that sentence adverbs cannot be focus, one can observe a parallel between the initial position of sentence adverbs and the left-position of VP adverbs and adjectives. One could, perhaps, state generally for French:

- Adjectives and adjectival adverbs occurring in the rightmost of several possible positions (except final and parenthetical ones) are precise, specifying, objective.
- Adjectives and adjectival adverbs occurring in the leftmost of several positions are related to the speaker and the speech act¹, and are unprecise, non-classifying, emotive.

In the same way that focus, or 'logical predicate', can be related to the accent in French, which obligatorily falls on the last syllable in the word group, one might relate the 'subjectivity' of the left-modification to the so-called 'emotive expressive' accent (superimposed on the 'logical', normal one) which falls on the first syllable in the word.

¹ Cf. also performative adverbs (stylistic disjuncts, Greenbaum (1969)) like franchement, personnellement etc., which occur only initially.

If these observations are correct, they might suggest an answer to the question posed above as to how we may characterize theme or topic for adjectives and adverbs which are not 'old fact'. Also they may contribute to the discussion of theme and rheme in a wider perspective.

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CONVERSE TERMS IN SWEDISH

1. INTRODUCTION

Semanticists have long since identified converse relations and definitions and examples can be found in any handbook. We quote Lyons by way of introduction (1963, p. 73):

"An interesting meaning-relation, which is sometimes popularly confused with antonymy, is the relation that holds, for instance between buy:sell, husband:wife. I will say that buy and sell etc. are converse terms, that buy is the converse of sell and vice versa... Though converse terms seem to be much less frequent in Greek, as also in English and other languages with which I am acquainted, than antonyms, it is important to recognize the relation in describing the structure of those lexical subsystems in which it is constitutive. It would be of the first importance, for instance, in describing the meaning of kinship terms in many languages."

The converseness relation poses certain interesting problems, which may be summed up in the following questions:

1. How are converse terms to be defined? What is the relation between converse terms and processes such as topicalization and passivization?
2. How many converse terms - or pairs of converse terms - exist in the lexicon of a language such as Swedish? What syntactic and semantic types can be distinguished?
3. Is it reasonable to call one member of a pair of converse terms the unmarked member? What arguments could be brought to bear on the decision?

The impetus to this study comes from an attempt to design a computer program that is to generate different texts on the basis of the same set of facts. The following two versions illustrate how strings of facts

can be converted.

- a. Charles is the father of Bill, who owns the house that is of interest to me.
- b. I am interested in the house that belongs to Bill, who is Charles' son.

Different versions of a story can be considered as different paths in a semantic network. If the text in our example above starts at Charles, the predicate will be father, if it starts at I, the equivalent predicate will be son. We want to know to what extent special lexical converse terms (converses proper) are available and to what extent we will have to rely on the passive or topicalization. The availability of converse expressions is a factor affecting word order.

Clearly the study of converse terms will touch on interesting stylistic problems. Converting is one way of rephrasing. In the following exploratory study of converse terms we will use Swedish examples, but (literal) English translation will be given and we will learn something about English converse terms as well. Some of the problems discussed have been treated at some length by Katz (Katz, 1968). He is, however, mainly interested in the formalization of cases where time is of crucial importance. Russian converse terms have been treated by Apresjan (1975), who also surveys previous work.

2. DEFINITIONS AND TERMINOLOGY

The definition of converse terms rests on the observation that the subject and the object (or the equivalent) may be permuted with no other change of meaning than a shift of focus, if the predicate is changed into its converse at the same time. Thus, permuting Charles and Bill and at the same time changing sold to into bought from does not change the meaning of Charles sold the car to Bill - Bill bought the car from Charles carries the same meaning, but the focus is now on Bill. Permuting Bill and Charles, and substituting father of for son of does not change the meaning of Bill is the son of Charles. The relation that holds between the converse terms has been called the "converseness" relation by Lyons (1968, p. 468).

More formally we will say that two predicates T_1 and T_2 are converse terms, if $X T_1 Y$ implies, and is implied by $Y T_2 X$, or

$$X T_1 Y \leftrightarrow Y T_2 X$$

Lyons (1968) notes the differences between implication and some related concepts:

"Other lexical items are 'permutationally' related in the same way as converse terms, although they do not imply one another." For example, NP_1 asked (NP_2)... expects; rather than implies, NP_2 answered (NP_1) ...; and NP_2 answered (NP_1)... presupposes NP_1 asked (NP_2)... Similarly, NP_1 offered NP_3 to NP_2 'expects' the disjunction of the complementary sentences NP_2 accepted NP_3 and NP_2 refused NP_3 . 'Expectancy' and 'presupposition' of this kind are ordered with respect to temporal sequence: this is not so, it should be noted, in cases such as give and receive." (p. 449). In the following survey we will be generous and include some logically dubious cases. In stylistic rephrasing subtle semantic differences may be disregarded and we are interested in the options offered by language.

Lyons uses "converse terms" and "converses" interchangeably, and we will follow his practice. We will reserve "converse relation" for the underlying semantic or logical converse relation. Underlying the lexical terms lära 'teach' and undervisa 'teach' we assume a 2-place relation that could be represented e.g. by SUPEDU (such abbreviations will be explained below). The relations SUBGEN and SUPGEN are the converse relations underlying the converse terms child of and parent of. It is, however, often possible to use "converse terms", "converses", and "converse relations" interchangeably.

The general converseness relation (C) is defined by all the individual pairs of converse terms (or relations) in which the relation is said to hold. We may write $T_1 C T_2$, if T_1 and T_2 are converse terms (are included in C). The pairs can be represented in a matrix, where the items are listed in the vertical and the horizontal row. A plus in such a matrix shows that the terms corresponding to the square in the matrix are considered as converse terms. Table 1 shows a fragment of the whole matrix of the converseness relation (C) in Swedish.

	granne	förälder	barn	far	son	lärare	elev	undervisar	ger	ges	får	är mot- tagare för
granne "neighbour"	+											
förälder "parent"		/	+		(+)							
barn "child"		+	/	(+)								
far "father"			(+)	/	(+)							
son "son"		(+)		(+)	/							
lärare "teacher"						/	+					
elev "student"						+	/	+				
undervisar "teaches"							+	/				
ger "gives"									/	+	+	+
ges "is given"									+	/		
får "receives"									+		/	
är mottagare för "is re- ceiver of"									+			/

Table 1. The table shows features of the converseness relation (C) by representing some of the pairs of converse terms that belong to the relation in a matrix. A plus (+) sign indicates that the pair corresponding to that square are converse terms. Parentheses indicate hesitation (to be commented on in text).

The general converseness relation (C) has the following formal properties:

- C is non-reflexive, since it is not the case that all terms also are converse terms of themselves. Reflexive examples are: granne "neighbour", kusin "cousin".
- C is symmetrical, since it is the case for all pairs (T_1, T_2) of converse terms that if T_1 is the converse of T_2 , T_2 is the converse of T_1 . Thus, föräldrar "parents" is the converse of barn "children" and barn is the converse of föräldrar.
- C is intransitive. There are no cases where we can establish a chain by combining $T_1 C T_2, T_2 C T_3$ into $T_1 C T_2 C T_3$ and find a pair $T_1 C T_3$ where T_1 and T_3 are converse terms. If we construe a chain of that type, T_1 and T_3 will be synonyms. Thus elev till "pupil of" is a converse of lärare för "teacher of", lärare för is a converse of student hos "student of", but elev till and student hos are (near) synonyms, not converse terms.

3. SYNTACTIC TYPES OF CONVERSE TERMS

The following survey of converse terms is based on the word classes of the terms. Nouns, adjectives and verbs are involved. For practical reasons we have included adverbial and prepositional expressions among the adjectives. We get six possible combinations:

1. Noun:noun Ex. X är far ("father") till Y:Y är son ("son") till X
2. Adjective:adjective Ex. X är lik ("similar") Y:Y är lik X
3. Verb:verb Ex. X gifter sig med ("marries") Y:Y gifter sig med X
4. Noun:verb Ex. X siktar ("aims") på Y:Y är mål ("target") för X
5. Noun:adjective Ex. X är chef ("head") för Y:Y är underställd ("subordinate") X
6. Verb:adjective Ex. X känner till ("knows") Y:Y är bekant ("familiar") för X

Note that examples given in handbooks are generally from classes 1,2,3. Our lists are more exhaustive.

3.1. Noun:noun converses

Symmetrical cases

- X är bror ("brother") till Y (if both are male)
 sväger ("brother-in-law") till (if both are male)
 kusin ("cousin") till
 syster ("sister") till (if both are female)
 ?syskon ("sister or brother, sibling") till (rare)
 släktning ("relative") till
 vän ("friend") till/med
 partner ("partner") till
 medspelare ("partner") till
 kompanjon ("companion") med
 granne ("neighbour") till
 make/a ("husband/wife/mate") till
 motståndare ("antagonist") till
 ?fiende ("enemy") till
 (klass)kamrat ("class-mate") med/till
 fästmo/fästman ("fiancé, -ée") till
 X har förhållande ("relation") till Y

Non-symmetrical cases

- X är far ("father") till Y:Y är son/dotter/barn ("son/daughter/child")
 till X
 X är förälder ("parent") till Y:Y är barn ("child") till X
 X är förfader ("ancestor") till Y:Y är efterkommande ("descendent")
 till X
 X är moster ("aunt") till Y:Y är systerson/systerdotter ("nephew/niece")
 till X
 X är farfar ("grandfather") till Y:Y är sonson/sondotter/dotterdotter/
 dotterson ("grandson/granddaughter") till X
 X är lärare ("teacher") för Y:Y är elev ("pupil, student") till X
 X är läkare ("doctor") för Y:Y är patient ("patient") hos X
 X är advokat ("lawyer") för Y:Y är klient ("client") hos X
 X är förmän ("foreman") för Y:Y är underordnad ("subordinate") X
 X är herre ("master") över Y:Y är slav ("slave") under X
 X är arbetsgivare ("employer") för Y:Y är arbetare/tjänsteman/anställd
 ("worker/employee") hos X

- X är långivare ("lender") för Y:Y är låntagare ("borrower") hos X
 X är chef ("head") för Y:Y är X's underlydande ("subordinate")
 X är värd ("host") för Y:Y är gäst ("guest") hos X
 X (male) är Y's husse ("master") :?Y är hund/katt ("pet dog, cat etc.")
 hos X
 X (female) är Y's matte ("mistress") :?Y är X's hund/katt etc.
 X är målsman/förmyndare ("guardian") för Y:Y är myndling ("ward") hos X
 X är kund ("customer") hos Y:Y är försäljare ("salesman") till X
 X är författare ("author") till Y:Y är en bok/skrift/ett verk ("book/
 work") av X
 X är producent ("producer") av Y:Y är en av X's produkter ("products")
 X är material ("material") för Y:Y är en produkt ("product") av X
 X är följeslagare ("follower") till Y:Y är en ledare ("leader") för X
 X är kompanichef ("commander") för Y:Y är soldat ("soldier") under X
 X är idol ("idol") för Y:Y är beundrare ("admirer") av X
 X är medborgare/invånare ("citizen/inhabitant") i Y:Y är X's land/stad
 ("country/city")
 X är tangent ("tangent") till Y:Y är kurva ("curve") till X
 X är diagonal ("diagonal") till Y:Y är kvadrat ("square") till X
 X är lösning ("solution") till Y:Y är problem ("problem") till X

We note that among the symmetrical cases the preposition generally is till. The preposition med occurs in a few cases. It is optional with kompanjon, kamrat, vän; med is the typical preposition with adjectives. The borderline between nominal and adjectival constructions is not sharp. It can be studied in the pairs X är (en) synonym/parallell till Y - X är synonym/parallell med Y, where the first occurrences are felt as nouns and the second as adjectives (see group 2 below).

As noted by Lakoff and Peters (1969) symmetrical predicates allow variants with complex NP: X är lik Y "X is similar to Y" - X och Y är lika "X and Y are similar". X och Y är systrar is, however, only a correct transform of X är syster till Y, if both are female.

Among the pairs mentioned there are several "weak cases". We marked such cases within parentheses in table 1. Thus syster till is a converse term related to the disjunction of syster till "sister of" and bror till "brother of". The term syskon "sibling" is hardly used with a singular subject. Another complication is obvious in vän till "friend of" and fiende till "enemy of". Although X considers Y his friend (vän),

it is not necessarily the case that Y considers X his friend. There are certainly cases where a person could say that somebody is his enemy (*fiende*), without implying that the other would even know about him. It is rather the case that we expect - to use Lyons's term - Y to be X's enemy if X is Y's enemy.

The clearest cases, accepted as converse terms by everybody, are probably the kinship terms. We note that the preposition *till* is a characteristic feature of that group. We also note that the genitive construction is optional for almost all cases in Swedish, in English the genitive with *'s* and (double) genitive with *of* (and *'s*) compete. We will not go into any detail at this point. Outside the kinship terminology other prepositions are found, above all *för*, *hos*: *läkare för*, *värd för*, *patient hos*, *gäst hos*.

Some difficulties appear when we want to use *matte* "the pet dog's (or cat's) master". It is strange to say *Y är hund ("pet dog") hos X* - as if it was a job to be a pet, or as if a dog was an institution, a compulsory attribute. The peculiarities of the cases of *tangent*, *diagonal*, and *lösning* indicated by question-marks seem to be related to the peculiarity of genitive constructions such as *tangentens kurva*, *diagonalens kvadrat*. As noted by Brodda (1975) in combinations where one of the members is psychologically dominant (the principate) this member is expected to be in the genitive. The diagonal is an attribute of a square and *kvadratens diagonal* is therefore natural. And *diagonalens kvadrat* and *kvadraten till diagonalen* are equally strange. We have, however, not investigated the relations between *'s*-genitive and our prepositional constructions.

3.2. Adjective:adjective converses

Symmetrical cases

- X är lik ("similar") Y
 olik ("not similar") Y
 lika F som Y ("as F as Y")
 synonym ("synonymous") med
 liktydig ("synonymous") med
 homonym ("homonymous") med
 parallell ("parallel") med
 identisk ("identical") med

gift ("married") med
 förbunden ("associated") med
 skild ("divorced") från
 relaterad ("related") till
 nära ("near, close")
 jämbördig ("equal") med
 jämställd ("equal") med
 vid (sidan av) ("by (the side of)")
 bredvid ("beside")
 samtida ("contemporary") med
 jämngammal ("of equal age") med
 släkt ("akin") med

Non-symmetrical cases

X är överlägsen ("superior") Y:Y är underlägsen ("inferior") X
 X är över ("over, above") Y:Y är under ("under, below") X
 X är bakom ("behind") Y:Y är framför ("in front of") X
 X är till höger ("right") om Y:Y är till vänster ("left") om X
 X är större ("bigger") än Y:Y är mindre ("smaller") än X
 X är längre ("longer, taller") än Y:Y är kortare ("shorter") än X
 X är tjockare ("thicker") än Y:Y är smalare/tunnare ("thinner") än X
 X är högre ("higher") än Y:Y är lägre ("lower") än X
 X är djupare ("deeper") än Y:Y är grundare ("shallower") än X
 X är bredare ("broader") än Y:Y är smalare ("narrower") än X
 X är klokare ("wiser") än Y:Y är dummare ("more stupid") än X
 X är närmare ("closer") än Y:Y är ?fjärrare ("more distant") än X

We note that med is the preferred preposition in Swedish (in English to). Comparatives proper take än (in English than).

3.3. Verb:verb converses

Symmetrical cases

X kommunicerar ("communicates") med Y
 konfererar ("confers") med
 konverserar ("chats") med
 förhandlar ("negotiates") med
 sammanträffar ("meets") med
 liknar ("resembles")

motsvarar ("corresponds")
 gifter sig ("marries") med
 skiljer sig ("divorces") från
 betyder detsamma ("means the same") som
 slåss ("fights") med
 kysser ("kisses")

Non-symmetrical cases

X följer ("follows") Y:Y föregår ("precedes") X
 X äger ("owns") Y:Y tillhör ("belongs") X
 X besegrar ("beats") Y:Y förlorar ("loses") till/mot X
 X undervisar ("teaches") Y:Y lär ("learns") av X
 X kontrollerar ("controls") Y:Y lyder ("obeys") X
 X hyr ut ("lets") till Y:Y hyr ("rents") av/från X
 X lånar ut ("lends") till Y:Y lånar ("borrows") av/från X
 X ger ("gives") (Z) till Y:Y får/mottager ("gets/receives") (Z) av/från X
 X säljer ("sells") till Y:Y köper ("buys") av X
 X händer ("happens") Y:Y drabbas av/råkar ut för ("suffers, sustains") X
 X lyckas ("succeeds") med Y:Y lyckas ("is successful") för X
 X orsakar ("causes") Y:Y kommer ("stems") av X
 X (a theatre) ger ("performs") Hamlet: Hamlet går ("is staged") på X
 X gillar ("likes") Y:Y tilltalar/behagar ("pleases") X
 X uppskattar ("appreciates") Y:Y är populär ("popular/attractive") hos X
 X skrämmar ("frightens") Y:Y är rädd ("afraid") för

Symmetrical verb converses prefer the preposition med as do adjectival, and non-kinship noun symmetrical converses. Among the non-symmetrical cases till and av/från seem to be counterparts. The preposition för is found with experiencers. In several cases the conversion has to do with the syntactic status of the experiencer - a well-known problem.

We are close to the active-passive concept in ger:får/mottager. As several authors have observed active and passive forms can be considered as converses. Passive forms can be used as alternatives in several of the cases above. Subtle semantic differences appear. The passive forms kommuniceras med, konverseras med, sanmanträffas med seem to convey a special meaning where the activity is not mutual. Rather Y is a victim who is being the object of X's activity. Similarly, Y is presented as a victim or an object who is being the object of selling,

lending or giving in the passive forms säljs, lånas, hyrs. The converses proper generally present their subject as an active person with both volition and intention. If we test by inserting avsiktligt ("intentionally") we find that få cannot take avsiktligt, but mottaga and the passive gavs can. With mottaga it is the receiver's intention, with gavs it is the giver's.

We are close to Lyons' concept of 'expects' rather than 'implies' in some cases. It is not certain that Y will learn although X teaches him - a fact well-known to teachers. Similarly we expect that Y lyder ("obeys") X when X controls or is in command of him, but we cannot be certain (of course, you might then say that X does not really control Y). Not even the pair ge "give":få "get" is safe. Although X gives something to Y, Y may not get it - because it is dropped or because of other intervening circumstances. Similarly kyssa "kiss" seems to have two meanings, one symmetrical when both parts are equally involved, one where an initiator and an object (victim) can be distinguished. The verb skrämma "frighten" may be divided into two: one where the object does not react and one where he is scared. It is then only the second that has rädd "afraid" as its converse. Related problems are treated in Fretheim 1970, Lee 1969.

3.4. Verb:noun converses

- X skjuter ("shoots") på Y:Y är måltavla ("target") för X
- X reser ("goes") till Y:Y är resmål ("destination") för X
- X handlar ("deals in") med Y:Y är handelsvara ("merchandise") för X
- X bränner ("burns") (upp) Y:Y är bränsle ("fuel") för X
- X plågar/torterar/dödar ("torments/tortures/kills") Y:Y är offer ("victim") för X
- X ägnar sig ("devotes") åt Y:Y är objekt ("object") för X
- X ser upp ("idolizes") till Y:Y är ideal ("ideal") för X
- X fotograferar ("photographs") Y:Y är motiv ("motif") för X
- X målar ("paints") Y:Y är modell ("model") för X
- X undervisar ("teaches") Y:Y är elev ("pupil, student") hos X
- X säljer ("sells") till Y:Y är kund ("customer") hos X
- X bor ("lives") i Y:Y är boplatz (bostad) ("abode") för X
- X kostar ("costs") Y:Y är priset ("price") för/på X
- X äter ("eats") Y:Y är föda ("food") för X

X födde ("bore") Y:Y är barn ("child") till X
 X fruktar ("fears") Y:Y är X's skräck ("horror")
 X intresserar sig ("takes an interest") för Y:Y är av inresse/intressant
 ("of interest/interesting") för X
 X gagnar/är till gagn ("helps/is of use") för Y:Y har nytta (benefits) X
 X bekymrar sig ("cares") om Y:Y är ett bekymmer ("problem") för X

In many cases it is difficult to find a suitable nominal partner. X gillar ("likes") Y and Y är X's favorit "Y is X's favourite" seem close but one might argue that a favourite is not just somebody you like but somebody singled out from all the people you like.

3.5. Noun:adjective converses

X är chef ("head") för/över Y:Y är underordnad/underställd ("subordinate") X
 X är (en) släkting ("relative") till Y:Y är släkt ("akin") med X
 X är make ("mate") till Y:Y är gift ("married") med X
 X är långivare ("lender") åt Y:Y är skyldig ("owes") X (Z kronor)

Such cases seem to be best considered as mixtures of converse types from different word-classes. There seems to be a converse term of the same word-class available in all cases (see the other lists).

3.6. Verb:adjective converses

X är överordnad ("superior") Y:Y lyder ("obeys") X
 X liknar ("resembles") Y:Y är lik ("similar") X
 X dominerar ("dominates") Y:Y är mindre ("inferior") än X
 X kan/känner till ("knows") Y:Y är bekant ("familiar") för X

Such cases seem to be combinations of other pairs of converse terms, where both members belong to the same word-class. By combining items from the other lists we can make up many new pairs.

Converse terms of all adjectives may be obtained by using the verb kännetecknar "characterizes" and a nominalization of the adjective as the subject. We get pairs such as X är stark ("strong"): Styrka kännetecknar X "Strength characterizes X", X är svart ("black"): Svarthet (svärta) kännetecknar X "Blackness characterizes X".

Let us include the following pairs at this point:

X är/står/sitter/ligger ("stands/sits/lies") i Y:Y rymmer/hyser ("contains") X

X är/står/sitter/ligger på Y:Y (upp)bär/har ("carries/supports/has") X

Examples are Hunden är i huset "The dog is in the house": Huset hyser/rymmer hunden "The house contains/houses the dog": Tavlan sitter på väggen "The picture is hanging on the wall": Väggen bär tavlan "The wall carries/supports the picture".

4. THE MAJOR SEMANTIC AREAS OF CONVERSE TERMS

Converse terms cluster in areas where there is a rich and varied terminology. Converse terms are to be found when there is a need to talk about the same person or object from different points of view. The relationship between X and Y can be indicated by foregrounding X or Y. In a school situation we may say: X is Y's teacher, X teaches (Z to) Y, X gives lectures (in Z) to Y or we may say: Y is X's student or pupil, Y is in X's class, Y takes lessons from X (in Z), Y learns (Z) from X.

On closer inspection it appears that converse terms often have to do with localization (over:under:beside:near) or fundamental social relations (superordination:subordination:co-ordination (equality)). We will investigate pairs of converse terms where there is a difference in superordination (and subordination) in 4.1. In 4.2. we will look at some co-ordinative converse terms.

Other important areas are:

possession and transfer of goods (owing:belonging, selling:buying,

lending:borrowing)

possession and transfer of information (knowing:being familiar,

telling:listening, teaching:learning)

appreciation (liking:pleasing, appreciating:appealing, disliking:

unpleasant)

attention (taking an interest:being interesting)

production (producer of:product of, being material for:being made of)

similarity (similar:different)

4.1. Superordination (and subordination) in converse terms

Superordination (superiority) and its converse relation subordination (inferiority) show up in many areas: kinship, teaching, military organization, administration, medicine. In table 2 we have factored out the superordination element (denoted by SUP) and the subordination

element (denoted by SUB). The remaining semantic element is suggested by abbreviations such as GEN (for genitary), FED (for federal), EDU (for education), ADM (for administration).

We note that kinship relations are common in converse terms, which is a sign that life makes it necessary to have terms for talking about relatives in many ways. Kinship terms are generally nouns - there is e.g. no verb or adjective to indicate that a person is the father of another person in Swedish.

Sex plays an interesting role in kinship terms. In Swedish it is only the sex of the person in focus that matters, never the sex of the other person. Thus far till and mor till indicate the sex of the person in focus (the subject) and so do son till and dotter till. There is no term to be used only in a situation when we talk about a male person in his relation to a female child. When son of rather than daughter of is mentioned as the converse of father of, it is presumably due to the fact that the person in focus is male in both cases. The term son of can be defined as the mirror converse term of father of on the basis of the facts just mentioned.

N

V, A

SUP + GEN +M far "father"	
SUB + GEN +F mor "mother"	
SUB + GEN +M son "son"	
SUB + GEN +F dotter "daughter"	
SUP + EDU +M lärare "teacher"	undervisa, lära ut "teach"
SUB + EDU elev, student "student"	lära(sig) "learn"
SUP + WAR segrare "victor"	segra "win"
SUB + WAR förlorare "loser"	förlora "lose"
SUP + HOS värd "host"	(bjuda "invite")
SUB + HOS gäst "guest"	(tacka "thank")
SUP + ADM chef "director, head"	(bestämma "decide")
SUB + ADM underlydande "subordinate"	(lyda "obey")
SUP + LAB arbetsgivare "employer"	(betala lön för "pay")
SUB + LAB arbetare, anställd, lönta- gare "employee, worker"	arbeta "work for"
SUP + FED herre "master"	behärska "dominate"
SUB + FED slav "slave"	(lyda "obey")
SUP + POS ägare "owner"	äga "possess"

SUB + POS	ägodel "possession"	tillhöra "belong"
SUP + MIL	befälhavare "commander"	kommendera "command"
SUB + MIL	underlydande "subordinate"	lyda "obey"
SUP + SOC	ledare "leader"	leda "lead, head"
SUB + SOC	följeslagare, anhängare "follower, adherent"	följa "follow"
SUP + IDO	idol "idol, ideal"	(charmera "charm")
SUB + IDO	beundrare "admirer, fan"	beundra "admire"
SUP + JUR	advokat "lawyer"	(biträda "assist")
SUB + JUR	klient "client"	konsultera "consult"
SUP + MED	läkare "doctor"	bota "help, heal"
SUB + MED	patient "patient"	konsultera, gå hos ("go to")
SUP + HIG		längre ("taller") än
SUB + HIG		kortare ("shorter") än
SUP + DOG +M	husse "master"	
SUP + DOG +F	matte "mistress"	
SUB + DOG	(hund, husdjur "pet")	

Table 2. The table shows pairs to converse terms where the super (SUP) sub (SUB) distinction can be distinguished. The abbreviations GEN "genitary", EDU "educational" etc. should be self-explanatory. Equivalent verbs have been suggested. For basic dimensions such as height, only adjectival expressions are used in Swedish.

We note that some words can be used without any related person to denote profession or state: advokat ("lawyer"), lärare ("teacher"), värd ("host"). In the search for suitable converse terms we note that suitable verbs may be difficult to find. The words behärska "dominate, master" and lyda "obey" often come to mind. When X is Y's doctor we may suggest X hjälper ("helps"), botar ("heals") Y. If Y is in focus the situation is better: we may say X är Y's patient or Y är patient hos X and the verb gå hos seems suitable, but gå hos is also used to describe the relation to the hair dresser and the music teacher. Again there is no one-to-one equivalent. Perfect pairs of converse terms seem to be exceptional.

The fundamental properties length, size, age, weight, price are only expressed by adjectives in Swedish. We have to say X är längre än Y, if we want to express X's superiority in that dimension. There is no noun such as e.g. X är ⁺jätte ("giant") till Y and no verb such as e.g. X ⁺långar ("dominates in size") Y. The expression X är en jätte i jämförelse med Y "X is a giant compared to Y" is acceptable, but it includes the elaborated phrase i jämförelse med which is not needed in converse terms proper. (Cf. English X is Y's senior and French X est le cadet d'Y.)

4.2. Coordination in converse terms

In table 3 we denote coordination by CO - and general semantic areas by self-explanatory abbreviations as before. Some areas have been mentioned in 4.1. In the educational sphere we now meet X är klasskamrat/skolkamrat/studiekamrat med Y "X is a classmate/schoolmate/fellow student of Y". (The American term coed "female (college) student") has a striking similarity to our semantic representation CO+EDU).

Our analysis of granne is based on closeness (CLO), but etymologically granne seems to be based on cooccurrence in a house, judging from Gothic garazna, where ga means co ("together") and razna is a word for house. A new noun with similar meaning is needed to supplement the Swedish kinship terms. While the traditional vocabulary offers man, make, maka, fru, hustru for the partners in a marriage and fästman for the male and fästmö for the female if they are engaged to be married (pl: fästfolk) there are no Swedish words for persons who live under similar circumstances but without legal authorization - a situation very common these days. Among possible words that come to mind are the following: sambo (for both sexes), to be used as other kinship terms X är sambo till Y, X är Y's sambo, samhusing, samhuse (female: samhusa), medbo, medhusing, medhuse (medhusa), combo. Presently the participle sammanboende "living together" is the only word available in the area.

N

V, A

CO + GEN	syskon "sibling"
CO + GEN +M	bror "brother"
CO + GEN +F	syster "sister"
CO + EDU	klass-/skolkamrat "class-/schoolmate"
CO + BIZ	kompanjon/partner "partner"

CO + KRI	medbrottsling "joint culprit"	
CO + NUP +M	make, man "husband"	gift "married"
CO + NUP +F	maka, fru, hustru "wife"	gift "married"
CO + ENG +M	fästman "fiancé"	förlovad "engaged"
CO + ENG +F	fästmö "fiancée"	förlovad "engaged"
CO + SOC	vän "friend"	
CO + TEM	samtida "contemporary"	samtida
CO + OLD		jämngammal "eq.old"
CO + SIZ		jämnstor "eq.big"
CO + CLO	granne "neighbour"	
CO + SEM	like (make/maka) "peer,match"	likvärdig "equal in value (price)"

Table 3. The table shows an analysis of certain (symmetrical) converse terms where the factor coordination (CO) can be distinguished. The abbreviations NUP (nuptial), BIZ (business) etc. should be self-explanatory.

5. MARKED AND UNMARKED DIRECTION IN CONVERSE TERMS

As noted in several places in the preceding survey there is often a lack of symmetry in the pairs of terms. This lack may reflect preferred choice between the underlying directed relations. The fact that we have matte and husse, but no good expression for the pet in its relation to its master/mistress can be taken as evidence that the direction from master to pet (SUPDOG) is more natural - unmarked.

The criteria of markedness can be of different kinds (see Linell 1975). We may use the results of psycholinguistic experiments. Such experiments have indicated that it takes longer time to comprehend some converse terms. Experiments by Clark (Clark, 1973) indicate that over is easier to understand than under (Cf. also Johnson-Laird, 1972). Attempts to prove that the passive is more difficult to comprehend than the active are not convincing and on the whole there are few reliable results to be used for our purposes.

In table 4. we have applied some more formal criteria to pairs of converse terms. We have distinguished between direction A and direction

Criteria	Examples			
	A: husse, matte "master" B: husdjur "pet"	A: värd, -inna "host, -ess" B: gäst "guest"	A: X bor, finns, står i Y "X lives, is in Y" B: Y hyser, innehåller X "Y houses, contains X"	A: X är stark "X is strong" B: styrka kännetecknar X "strength characterizes X"
1. More lexical expressions of dir. A	+	+	+	
2. Terms of dir. A more specific	+	(+)	+	
3. Expressions of dir. A morpho-syntactically less complex	+	-	(+)	+
4. Dir. A offers "higher" subject	+		+	+

Table 4. The table shows the application of certain criteria of markedness to certain pairs of converse terms (directions of converse relations). Generally the criteria coincide. All criteria are not applicable to all cases. A plus (+) sign indicates that the proposal suggested in the criterion of the left column is correct.

B in the terms and try to judge which of the two directions is unmarked. There are of course many pairs of terms where no direction can be called unmarked.

Our first criterion is based on the assumption that the direction offering a choice of synonyms or variants (in sex) is the direction which is natural and unmarked. It would seem that the direction from the teacher to the student (SUPEDU) is unmarked according to this criterion, since we have lärare "teacher" and lärarinna "female teacher" but only elev "pupil" (used about both sexes). The situation is complex, however, as we have terms such as student, studentska (male and female university student) and we have the verbs undervisa, "teach" and lära "learn" with derivations such as undervisare, lärling.

It is sometimes hard to find a good expression for one direction. The term at hand may seem too vague, or even metaphorical. Things may be, sit, lie, stand and people may live at a place, but the place or location can only be said to house or contain these things or persons without indicating position or similar specific semantic features. Criterion 2 is supposed to cover such cases. The less specific, vague or not quite proper term is taken as the marked form.

Our third criterion takes morpho-syntactic form into account. We will determine complexity (loosely) on the basis of the number of morphemes involved. Thus X äter ("eats") Y (SUPEAT) seems to be the unmarked direction while Y är föda för X "Y is nourishment for X" is the marked direction (2 morphemes compared to 4). One might suggest föder "feeds" or när "nourishes" as converses of äter, but both these terms are rare (which means that frequency should be taken into consideration in a more serious discussion of markedness).

Our fourth criterion is an extension of hierarchies suggested in Clark & Begun (1971) and Fillmore (1968, 1971). Ideas about preferences in the choice of subject have been expressed by several authors old and modern. We suggest the following hierarchy:

HUMAN - ANIMAL - PLANT - PHYSICAL OBJECT - ABSTRACT - LOCALITY - TIME

We assume that the unmarked direction offers a subject ranked "higher" (further to the left) on this scale. From this point of view the direction represented by husse, matte is the unmarked di-

rection, since it offers a human subject instead of an animal. The direction represented in the terms sker, händer, inträffar ("happens, occurs, takes place") is unmarked as the subject of their converse terms has to be a locality or a time expression. The sentence Flera krig inträffade under 1800-talet "Several wars took place in the 19th century" can hardly be converted, as it seems unnatural to make a period of time the subject. An attempt to use it as the subject may give the following results: 1800-talet upplevde ("experienced"), såg ("saw") många krig. In that case the verbs are used metaphorically or rather we consider the time period as a human being (anthropomorphism).

The usual way out, if we want to focus on time or locality, is to apply the topicalization (preposing) transformation instead: Under 1800-talet inträffade många krig. We note that time and locality are often topicalized in text. Since we do not talk in isolated sentences but in text, where sentences have to be arranged coherently, languages have to offer alternative ways of expressing the same content. Asymmetries in converse terms reflect the organizing preferences.

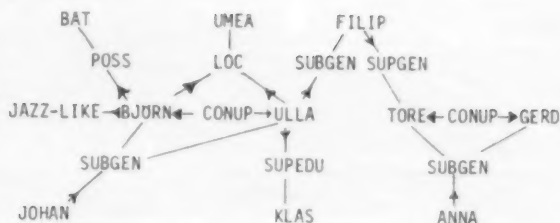
6. CONVERSION OF PATHS IN A SEMANTIC NETWORK

As indicated in the introduction, conversion can be applied to several sentences combined into a complex sentence or a piece of text. Such cases can easily be demonstrated in semantic networks, where conversion means travelling between different nodes in the opposite direction.

In fig. 1 we present a sample network including some of the relations mentioned previously. Beside the labels used above, we use LIKE as the semantic relation underlying surface predicates such as like, appreciate, estimate and the converse terms please, attract. The network thus represents knowledge about certain persons, things and localities. The representation of information by 2-place relations in semantic nets has been used in several projects dealing with text, understanding, memory (see Schank & Colby (1973), Welin (1975), Sigurd (1974, 1975)).

In the figure the relations are marked by the labels SUBGEN, SUPGEN, CONUP etc. and the direction of the relation (how it is to be traversed) is indicated by an arrow. The arrow thus indicates where to start (the subject). If we start at the student, the teaching re-

SEMANTIC NETWORK



SAMPLE TEXTS

BJÖRN BOR I UMEA. HAN ÄR GIFT MED ULLA DOTTER TILL FILIP. BJÖRN GILLAR JAZZ OCH HAR EN BAT. "BJÖRN LIVES AT UMEA. HE IS MARRIED TO ULLA, FILIP'S DAUGHTER. HE LIKES JAZZ AND HAS A BOAT."

EN BAT TILLHÖR BJÖRN. JAZZ TILLTALAR HONOM. FILIP ÄR FAR TILL ULLA SOM ÄR GIFT MED HONOM. UMEA ÄR HANS BOSTADSORT. "A BOAT BELONGS TO BJÖRN. JAZZ ATTRACTS HIM. FILIP IS FATHER OF ULLA, WHO IS MARRIED TO HIM. UMEA IS HIS LIVING-PLACE." (CONVERSION)

JOHAN ÄR SYSTERSON TILL TORE MAKE TILL GERD
GERD ÄR SVÄGERSKA TILL ULLA MOR TILL JOHAN (CONVERSION)

FIG. 1. SEMANTIC NETWORK REPRESENTING INFORMATION ABOUT CERTAIN PERSONS AND SAMPLE TEXT THAT CAN BE DERIVED FROM THE NETWORK.

lation is named SUBEDU. If we start at the teacher the corresponding converse relation is named SUPEDU. Symmetrical relations such as CONUP have been drawn with arrows in both directions. We have not drawn the converse relations in the figure - in order not to make it too complex. Instead of traversing the converse relation (B) of a relation (A), we may say that we traverse relation (A) in the opposite direction (against the arrow) - changing SUB into SUP, if the name of relation allows that.

The network includes some kinship relations, but we have now represented siblinghood by a chain of relations instead of one relation. Instead of X COGEN Y "X is sibling of Y" we have X SUBGEN Z SUPGEN Y, equivalent to "X is the child of a person who is a parent of Y". We have thus reduced the primary relations used in our semantic representation of kinship terminology.

The network of fig. 1 can be the basis of several texts, where all or part of the information is given surface syntactic and lexical form. Such texts represent paths through the network, paths that start at different nodes. Two fragments of different stylistic character are shown below the network in fig. 1.

The first version of the text, where Björn is the subject, seems to be the unmarked case. The second version also deals with Björn, but the sentences have other subjects and "point to" Björn, who is thus the theme but not the subject.

A very special type of text is found in family tree descriptions. Two illustrations are given at the bottom of fig. 1. We have developed a program that generates such text. The program (written in LISP 1.6) defines a function named (SLAKT X Y) and it returns an answer where the relations between the persons X and Y are described in a compact way. If we have stored the network of fig. 1 in the computer and ask whether Johan and Gerd are relatives (SLAKT JOHAN GERD) the answer will be: JOHAN AR SYSTERSON TILL TORE MAKE TILL GERD. If we ask whether Gerd and Johan are related (SLAKT GERD JOHAN) the answer will be GERD AR SVÄGERSKA TILL ULLA MOR TILL JOHAN. The two are converses, although the individual kinship terms are not. Programs generating equivalent kinship terms in different languages can easily be constructed. But these problems and the general problem of generating text from a semantic network will be treated in another paper.

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